CRPL-F 93

IONOSPHERIC DATA

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U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
WASHINGTON, D. C.

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CONTENTS

SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given in Document No. 626-E referred to above.

a. For all ionospheric characteristics:

Values missing because of A, C, F, L, M, N, Q, S, or T are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of foF2 (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F2 (and h'E near sunrise and sunset) missing for this reason are counted as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of D are counted as equal to or greater than the upper limit of the recorder.

Values missing because of G are counted:

1. For foF2, as equal to or less than foF1.
2. For h'F2, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic. This practice represents a change from that listed in issues previous to CRPL-F78.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G (and B when applied to the daytime E region only) are counted as equal to or less than the median foE, or equal to or less than the lower frequency count of the recorder.

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D. C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If only four values or less are available, the data are considered insufficient and no median value is computed.

2. For the F2 layer, if only five to nine values are available, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as there are at least five values, the median is not considered doubtful.

3. For all layers, if more than half of the values used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of the errors are due to:

a. Differences in scaling records when spread echoes are present.

b. Omission of values when foF2 is less than or equal to foFl, leading to erroneously high values of monthly averages or median values.

c. Omission of values when critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series report IRPL-F5.

Ordinarily, a blank space in the fEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'Fl, foFl, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'Fl and foFl is usually the result of seasonal effects.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.

b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.

c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

Month	Predicted Sunspot Number							
	1952	1951	1950	1949	1948	1947	1946	1945
December		53	86	108	114	126	85	38
November		52	87	112	115	124	83	36
October		52	90	114	116	119	81	23
September		54	91	115	117	121	79	22
August		57	96	111	123	122	77	20
July		60	101	108	125	116	73	
June		63	103	108	129	112	67	
May		68	102	108	130	109	67	
April	52	74	101	109	133	107	62	
March	52	78	103	111	133	105	51	
February	51	82	103	113	133	90	46	
January	53	85	105	112	130	88	42	

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 66 and figures 1 to 132 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

University of Graz:
Graz, Austria

British Department of Scientific and Industrial Research, Radio Research Board:
Falkland Is.
Inverness, Scotland
Singapore, British Malaya
Slough, England

Defence Research Board, Canada:
- Baker Lake, Canada
- Churchill, Canada
- Fort Chimo, Canada
- Ottawa, Canada
- Prince Rupert, Canada
- Resolute Bay, Canada
- St. John's, Newfoundland
- Winnipeg, Canada

French Ministry of Naval Armaments (Section for Scientific Research):
- Dakar, French West Africa
- Djibouti, French Somaliland
- Fribourg, Germany

Institute for Ionospheric Research, Lindau Uber Northeim, Hannover, Germany:
- Lindau/Harz, Germany

The Royal Netherlands Meteorological Institute:
- De Bilt, Holland

Icelandic Post and Telegraph Administration:
- Reykjavik, Iceland

Radio Regulatory Commission, Tokyo, Japan:
- Akita, Japan
- Tokyo (Kokubunji), Japan
- Wakkanai, Japan
- Yamagawa, Japan

Christchurch Geophysical Observatory, New Zealand Department of Scientific and Industrial Research:
- Christchurch, New Zealand
- Barotonga, Cook Is.

Norwegian Defense Research Establishment, Kjeller per Lillestrom, Norway:
- Oslo, Norway
- Tromso, Norway

South African Council for Scientific and Industrial Research:
- Capetown, Union of South Africa
- Johannesburg, Union of South Africa

Research Laboratory of Electronics, Chalmers University of Technology, Gothenburg, Sweden:
- Kiruna, Sweden

Research Institute of National Defence, Stockholm, Sweden:
Upsala, Sweden

Post, Telephone and Telegraph Administration, Berne, Switzerland:
Schwarzenburg, Switzerland

United States Army Signal Corps:
Adak, Alaska
Okinawa I.
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):
Anchorage, Alaska
Batavia, Ohio (mobile unit)
Baton Rouge, Louisiana (Louisiana State University)
Fairbanks, Alaska
Guam I.
Huancayo, Peru (Instituto Geofisico de Huancayo)
Maui, Hawaii
Narsarssuak, Greenland
Panama Canal Zone
Point Barrow, Alaska
Puerto Rico, W. I.
San Francisco, California (Stanford University)
Washington, D. C.

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

The data given in tables 67 to 78 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Symbols, Terminology, Conventions." Beginning with September 1949, the data are taken at Ft. Belvoir, Virginia.

IONOSPHERIC STORMINESS AT WASHINGTON, D.C.

Table 79 presents ionosphere character figures for Washington, D. C., during April 1952, as determined by the criteria given in the report IRPL-R5, "Criteria for Ionospheric Storminess," together with Cheltenham, Maryland, geomagnetic K-figures, which are usually covariant with them.

RADIO PROPAGATION QUALITY FIGURES

Table 80 gives provisional radio propagation quality figures for the North Atlantic area, for 01 to 12 and for 13 to 24 GCT, for each day in March 1952. Also indicated in the table are: (1) CRPL radio disturbance warnings for North Atlantic paths, (2) CRPL semi-weekly advance forecasts of probable disturbed periods, and (3) half-day averages of geomagnetic K-indices measured by the Cheltenham Magnetic Observatory of the U. S. Coast and Geodetic Survey.

The radio propagation quality figures are prepared from radio traffic and ionospheric data reported to CRPL by a method similar to that described in IRPL-R31, "North Atlantic Radio Propagation Disturbances, October 1943 through October 1945," now out of print. The reports are submitted on various scales and for various time intervals. The observations for each Greenwich half day are averaged on the quality scale of the original reports. These half-day indices are then adjusted to the 1 to 9 quality figure scale. The conversion table was prepared by comparing the distribution of these indices for at least four months, usually a year, with a master distribution originally determined from analysis of many reports in 1946 made on the 1 to 9 quality figure scale. A report whose distribution is the same as the master is thereby converted linearly to the Q-figure scale. Each report is given a statistical weight which is the reciprocal of the departure from linearity. The half-daily radio propagation quality figures, beginning January 1948, is the weighted mean of the reports received for that period.

These quality figures are, in effect, a consensus of reported radio propagation conditions in the North Atlantic area. The reasons for low quality are not necessarily known and may not be ionospheric storminess alone. For instance, low quality may result from improper frequency usage for the path and time of day. Although, wherever it is reported, frequency usage is included in the rating of reports, it must often be an assumption that the reports refer to optimum working frequencies. It is more difficult to eliminate from the indices conditions of low quality because of multipath, interference, etc. These considerations should be taken into account in interpreting research correlations between the Q-figures and solar, auroral, geomagnetic or similar indices.

Note. The North Pacific quality figures which have been published through October 1951 have been temporarily discontinued. Since the establishment of the North Pacific Radio Warning Service at Anchorage, Alaska, a larger number of reports are being received than were previously available in Washington. The preparation of the quality figures will be resumed when sufficient data have been accumulated for determination of conversion tables for these new reports.

OBSERVATIONS OF SOLAR FLARES

Table 81 gives the preliminary record of solar flares reported to the CRPL. These reports are communicated on a rapid schedule at the sacrifice of detailed accuracy. Definitive and complete records are published later in the Quarterly Bulletin of Solar Activity, I.A.U., in various observatory publications, and elsewhere. The present listing serves to identify and roughly describe the phenomena observed. Details should be sought from the reporting observatory.

Reporting directly to the CRPL are the following observatories: Mt. Wilson, McMath-Hulbert, U. S. Naval, Wendelstein, Kanzel and High Altitude at Sacramento Peak, New Mexico. The remainder report to Meudon (Paris), and the data are taken from the Paris-URSIgram broadcast, monitored fairly regularly by the CRPL. The data on solar flares reported from Sacramento Peak, New Mexico, communicated by the High Altitude Observatory at Boulder, Colorado, are provided by Harvard University as the result of work undertaken on an Air Materiel Command Research and Development Contract administered by the Air Force Cambridge Research Laboratories.

The table lists for each flare the reporting observatory, date, times of beginning and ending of observation, duration (when known), total area (corrected for foreshortening), and heliographic coordinates. For the maximum phase of the flare is given the time, intensity, area relative to the total area, and the importance. The column "SID observed" is to indicate when a sudden ionosphere disturbance, noted elsewhere in these reports, occurred at the time of a flare. Times are in Universal Time (GCT).

OBSERVATIONS OF THE SOLAR CORONA

Tables 82 through 84 give the observations of the solar corona during April 1952 obtained at Climax, Colorado, by the High Altitude Observatory of Harvard University and the University of Colorado. Tables 85 through 87 list the coronal observations obtained at Sacramento Peak, New Mexico, during April 1952, derived by the High Altitude Observatory from spectrograms taken by Harvard University as a part of its performance of an Air Materiel Command Research and Development Contract administered by the Air Force Cambridge Research Laboratories. The data are listed separately for east and west limbs at 5-degree intervals of position angle north and south of the Solar Equator at the limb. The time of observation is given to the nearest tenth of a day, GCT.

Table 82 gives the intensities of the green (5303A) line of the emission spectrum of the solar corona; table 83 gives similarly the intensities of the first red (6374A) coronal line; and table 84, the intensities of the second red (6702A) coronal line; all observed at Climax in April 1952.

Table 85 gives the intensities of the green (5303A) coronal line; table 86, the intensities of the first red (6374A) coronal line; and table 87, the intensities of the second red (6702A) coronal line; all observed at Sacramento Peak in April 1952.

The following symbols are used in tables 82 through 87: a, observation of low weight; -, corona not visible; and X, position angle not included in plates estimates.

RELATIVE SUNSPOT NUMBERS

Table 88 lists the daily provisional Zürich relative sunspot number, R_Z, as communicated by the Swiss Federal Observatory. Table 89 continues the new series of American relative sunspot numbers, $R_{A'}$. Beginning with 1951, the observations collected by the Solar Division, AAVSO, have been reduced according to a new procedure, such that only high quality observations of experienced observers are combined into $R_{A'}$. Observatory coefficients for each of the 28 selected observers were recomputed on data for 1948-1950, years when there was a wide range of solar activity. Otherwise, the procedure is that outlined in Publication of the Astronomical Society of the Pacific, 61, 13, 1949. The scale of the American numbers in 1951 differs from that of the reports for earlier years because of these changes, and the new series is designated $R_{A'}$ rather than R_A. The American relative sunspot numbers appear monthly in these pages, as communicated by the Solar Division.

INDICES OF GEOMAGNETIC ACTIVITY

Table 90 lists various indices of geomagnetic activity based on data from magnetic observatories widely distributed throughout the world. The indices are: (1) preliminary international character-figures, C; (2) geomagnetic planetary three-hour-range indices, Kp; (3) magnetically selected quiet and disturbed days.

The C-figure is the arithmetic mean of the subjective classification by all observatories of each day's magnetic activity on a scale of 0 (quiet) to 2 (storm). The magnetically quiet and disturbed days are selected by the international scheme outlined on pages 219-227 in the December 1943 issue of Terrestrial Magnetism and Atmospheric Electricity. The details of the currently used method follow. For each day of a month, its geomagnetic activity is assigned by weighting equally the following four criteria: (1) C; (2) the sum of the eight Kp's; (3) the greatest Kp; and (4) the sums of the squares of the eight Kp's.

Kp is the mean standardized K-index from 11 observatories between geomagnetic latitudes 47 and 63 degrees. The scale is 0 (very quiet) to 9 (extremely disturbed), expressed in thirds of a unit, e.g., 5- is 4 2/3, 5o is 5 0/3, and 5+ is 5 1/3. This planetary index is designed to measure solar particle-radiation by its magnetic effects, specifically to meet the needs of research workers in the ionospheric field. A complete description of Kp has appeared in Bulletin 12b, "Geomagnetic Indices C and K, 1948," published in Washington, D. C., 1949, by the Association of Terrestrial Magnetism and Electricity, International Union of Geodesy and Geophysics. Tables of Kp for 1945-48 are in Bulletin 12b; for 1940-44 and 1949, in these CRPL-F reports, F65-67; for 1950, monthly in F68 and following issues. Current tables are also published quarterly in the Journal of Geophysical Research along with data on sudden commencements (sc) and solar flare effects (sfe).

The Committee on Characterization of Magnetic Disturbance, ATME, IUGG, has kindly supplied this table. The Meteorological Office, De Bilt, Holland, collects the data and compiles C and selected days. The Chairman of the Committee computes the planetary index.

SUDDEN IONOSPHERE DISTURBANCES

Table 91 lists the sudden ionosphere disturbances observed at Ft. Belvoir, Virginia, April 1952.

TABLES OF IONOSPHERIC DATA

Table 1

Washington, D. C. (38.7°N, 77.1°W) — April 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.0						2.8
01	(300)	2.6						2.8
02	300	2.4						2.8
03	300	2.0						2.8
04	(300)	1.8						3.0
05	(300)	2.0						2.9
06	270	3.2	250	---	120	1.7		3.2
07	320	3.9	230	3.4	110	2.3		3.1
08	380	4.3	220	3.8	110	2.6		2.9
09	400	4.7	210	4.0	110	2.8		2.8
10	420	4.9	200	4.2	100	3.0		2.8
11	420	5.1	200	4.3	100	3.1		2.8
12	400	5.4	200	4.3	100	3.2		2.8
13	360	5.7	200	4.2	100	3.2		2.8
14	350	5.8	210	4.2	100	3.1		3.0
15	330	5.6	220	4.1	100	3.0		3.0
16	340	5.4	230	3.9	100	2.7		3.0
17	300	5.4	230	3.5	110	2.4		3.0
18	280	5.6	250	---	120	1.9		3.1
19	250	5.6						3.1
20	240	5.1						3.1
21	240	3.8						3.0
22	280	3.4						2.9
23	290	3.0						2.8

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 2

Point Barrow, Alaska (71.3°N, 156.8°W) — March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(250)	(3.1)					7.0	(3.1)
01	---	(3.2)					6.5	---
02	---	---					6.8	---
03	(260)	(2.8)					5.0	(3.0)
04	(310)	(2.8)					5.2	---
05	(300)	(>3.0)					5.2	(2.9)
06	(310)	(>3.1)			---	---	4.9	(3.0)
07	(300)	(3.1)			---	---	5.0	(3.1)
08	---	(>3.4)	---	---	100	---	5.3	(3.0)
09	---	(3.7)	---	---	100	2.3	4.5	(3.0)
10	(310)	3.8	240	3.3	100	2.5	4.4	3.1
11	280	4.0	230	3.4	100	2.5	4.1	3.2
12	320	3.9	220	3.5	110	2.6		3.2
13	360	4.1	230	3.5	100	2.7		3.1
14	330	4.4	220	3.5	110	2.5		3.0
15	290	4.4	230	3.4	110	2.4		3.2
16	260	4.0	230	3.2	110	2.3	2.0	3.1
17	240	3.9	230	2.9	110	2.0	2.0	3.2
18	250	3.6			---	---	3.0	3.1
19	250	(3.2)			---	---	3.9	(3.1)
20	280	2.6					5.0	(3.1)
21	(310)	(2.4)					7.3	(2.9)
22	---	---					7.0	---
23	---	(3.0)					6.8	---

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 3

Tromso, Norway (69.7°N, 19.0°E) — March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					3.8	---
01	---	---					3.5	---
02	---	---					4.0	---
03	---	(2.5)					4.0	(3.0)
04	(295)	(2.4)			---	---	3.6	(3.0)
05	(325)	3.0			---	---	2.8	2.8
06	(315)	3.3	---	---	---	1.8		3.1
07	(265)	3.7	245	---	---	2.0		3.2
08	---	4.4	240	---	120	2.2		3.2
09	(300)	4.5	230	3.6	125	2.4		3.2
10	(305)	4.5	240	3.6	120	2.6	2.7	3.2
11	300	4.7	240	3.7	130	2.6		3.1
12	290	4.9	235	3.8	130	2.5		3.1
13	275	4.7	240	(3.6)	---	2.5		3.2
14	280	4.4	260	(3.5)	120	2.3		3.1
15	270	4.3	250	---	125	2.1		3.2
16	280	4.0	265	---	---	2.0	3.0	3.2
17	270	4.1	---	---	120	2.0	3.6	3.1
18	270	3.8			---	---	3.6	3.2
19	(275)	(3.9)					4.0	(3.1)
20	(295)	(2.8)					4.1	(2.9)
21	---	(2.8)					4.0	---
22	---	---					4.6	---
23	---	---					4.0	---

Time: 15.0°E.
Sweep: 0.6 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 4

Anchorage, Alaska (61.2°N, 149.9°W) — March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.0					2.7	3.0
01	(3[illegible])	(1.9)					3.0	(3.0)
02	(360)	(2.5)					3.0	(2.8)
03	300	2.7					2.6	3.0
04	340	2.3					2.5	2.8
05	320	2.1						3.0
06	290	2.7			---	---		3.1
07	280	3.4	240	---	110	1.8		3.2
08	270	3.9	220	3.2	110	2.3		3.2
09	310	4.2	220	3.4	100	2.4		3.0
10	350	4.4	220	3.6	100	2.6		3.1
11	330	4.6	210	3.8	100	2.7		3.2
12	300	5.0	220	3.8	100	2.8		3.2
13	340	4.5	220	3.7	110	2.9		3.0
14	320	4.6	220	3.7	110	2.8		3.1
15	270	4.7	220	3.6	110	2.6		3.2
16	250	4.7	230	---	110	2.3		3.3
17	250	4.7	230	---	---	2.1		3.3
18	240	4.4			---	---		3.3
19	250	4.1						3.2
20	250	3.0						3.2
21	260	2.3						3.2
22	270	2.2					2.1	3.1
23	300	2.2					2.5	3.1

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 5

Narsarssuak, Greenland (61.2°N, 45.4°W) — March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(410)	(2.4)					4.0	(2.6)
01	(400)	---					4.7	---
02	---	---					4.9	---
03	---	---					4.8	---
04	---	---					4.6	---
05	---	---					4.6	---
06	(360)	(3.1)			---	---	3.0	(2.8)
07	320	3.6			---	---	4.0	(2.9)
08	340	4.0	290	---	140	2.4		2.9
09	400	4.4	(280)	(3.5)	(140)	(2.5)		2.7
10	420	4.6	260	3.6	(140)	(2.6)		2.6
11	400	5.0	270	3.8	(150)	(2.7)		2.7
12	450	5.0	280	3.8	(140)	2.7		2.6
13	460	5.1	300	3.8	(140)	(2.6)		2.7
14	410	(5.0)	300	3.5	150	2.7		(2.7)
15	400	(4.8)	300	(3.5)	(140)	---	2.9	2.8
16	380	(4.6)	300	---	140	2.4	4.2	(2.8)
17	(330)	(4.1)	310	---	150	(2.0)	4.4	(2.8)
18	(330)	(3.9)			---	---	5.4	(2.7)
19	(360)	(3.5)					5.6	(2.7)
20	(370)	(3.0)					5.5	(2.6)
21	(370)	(3.0)					6.5	(2.6)
22	(400)	(3.0)					6.0	(2.6)
23	(410)	(2.5)					5.2	(2.5)

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 6

Oslo, Norway (60.0°N, 11.1°E) — March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	350	2.4						2.9
01	340	2.3					2.4	2.8
02	325	2.0					2.6	2.8
03	350	2.0					2.2	2.8
04	345	2.0						2.8
05	330	2.0					2.0	2.8
06	290	2.4			---	---	1.8	3.0
07	260	3.2	230	---	120	1.7	1.7	3.2
08	250	3.8	230	3.3	115	2.1		3.2
09	310	4.3	225	3.5	110	2.3		3.1
10	330	4.6	220	3.8	110	2.5	2.3	3.1
11	310	4.7	210	3.8	110	2.6	2.7	3.2
12	320	4.9	220	3.9	110	2.6		3.0
13	300	5.0	220	3.9	110	2.6		3.2
14	295	5.1	225	3.8	115	2.6		3.2
15	265	5.2	225	3.7	115	2.4		3.2
16	250	4.9	230	3.4	115	2.2		3.2
17	250	4.9	235	---	120	1.8		3.2
18	245	4.6	---	---	135	1.6		3.2
19	245	4.4			---	E		3.1
20	250	4.1						3.1
21	280	2.9						3.2
22	305	2.9						3.0
23	320	2.6						2.9

Time: 15.0°E.
Sweep: 1.3 Mc to 14.0 Mc in 8 minutes, automatic operation.

Table 7

Upsala, Sweden (59.8°N, 17.6°E) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	325	2.1						(2.6)
01	330	2.2					2.4	2.6
02	355	2.0					2.2	(2.6)
03	350	2.0					2.4	(2.5)
04	350	1.9					2.4	2.6
05	320	2.0					2.5	2.8
06	280	2.8			---	E		3.0
07	260	3.5	235	---	130	1.9		3.1
08	260	4.1	230	3.3	120	2.2		3.1
09	320	4.5	225	3.7	120	2.4		3.1
10	320	4.8	220	3.8	115	2.5		3.1
11	320	5.0	220	3.9	115	2.6		3.1
12	305	5.0	220	4.0	115	2.7		3.1
13	300	5.2	220	3.9	115	2.6		3.1
14	300	5.2	230	3.8	115	2.6		3.2
15	270	5.1	230	3.5	115	2.5		3.2
16	250	5.0	235	(3.3)	120	2.2		3.2
17	260	4.7	250	---	135	1.8		3.1
18	250	4.8	---	---	---	E		3.0
19	250	4.2						3.0
20	250	3.2						3.0
21	300	2.8						2.9
22	315	2.3						2.7
23	325	2.2						(2.7)

Time: 15.0°E.
Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 8

Adak, Alaska (51.9°N, 176.6°W) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.8						2.9
01	300	2.8						2.8
02	300	2.8						2.8
03	290	(2.6)					1.1	(2.9)
04	290	(2.5)						(2.9)
05	290	2.4					2.2	(3.0)
06	280	(<2.9)	290	2.7	130	1.6	2.5	3.1
07	260	4.1	250	3.1	120	2.0	1.9	3.1
08	(280)	4.7	230	3.6	120	2.3	3.6	3.1
09	320	5.0	220	3.8	110	2.6	5.4	3.1
10	300	5.6	220	4.0	110	2.8	4.8	3.0
11	300	6.1	210	4.1	120	2.9	5.1	3.2
12	280	6.1	210	4.1	110	3.0	4.0	3.1
13	280	6.1	220	4.1	110	2.8	3.9	3.2
14	270	6.2	220	4.0	110	(2.8)	3.6	3.3
15	260	6.1	230	---	120	2.6	2.2	3.3
16	260	6.0	240	---	120	2.4	2.3	3.3
17	240	5.7	240	---	120	2.0	1.8	3.4
18	230	5.2			(140)	(1.6)	2.3	3.3
19	240	4.8					1.7	3.1
20	240	4.0						3.2
21	250	3.4						3.1
22	260	3.1						3.0
23	280	2.8						2.9

Time: 180.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 9

Graz, Austria (47.1°N, 15.5°E) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	3.1						
01	310	3.0						
02	300	3.0						
03	300	3.0						
04	300	2.9						
05	265	2.6						
06	270	2.8						
07	240	4.2						
08	240	4.9	200	3.7				
09	270	5.6	210	3.9				
10	270	5.9	200	4.0	115	3.0		
11	280	6.0	200	4.1				
12	280	6.4	200	4.2	110	3.2		
13	280	6.5	200	4.1	110	3.2		
14	260	6.2	200	4.0	110	3.2		
15	250	6.1	210	3.9		3.1		
16	250	6.0	210	3.8				
17	240	6.2						
18	240	6.1						
19	240	5.8						
20	250	5.1						
21	260	3.6						
22	300	3.3						
23	310	3.2						

Time: 15.0°E.
Sweep: 2.5 Mc to 12.0 Mc in 2 minutes.

Table 10

Batavia, Ohio (39.1°N, 84.1°W) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	3.0						2.9
01	---	2.8						(2.9)
02	---	(2.6)						(2.8)
03	---	(2.6)						(2.9)
04	---	2.5						(2.9)
05	---	(2.4)						(2.9)
06	---	(2.4)						(2.9)
07	250	3.3						3.2
08	250	4.2	230	3.4	110	(2.1)		3.3
09	280	4.8	210	3.7	110	2.5		3.2
10	310	5.0	200	4.0	110	2.7		3.1
11	320	5.8	190	4.1	110	2.8		3.1
12	300	6.1	190	4.3	110	2.9		3.1
13	300	6.4	210	4.3	110	3.1		3.0
14	300	6.8	210	4.2	110	3.0		3.1
15	290	6.6	220	4.1	120	2.8		3.1
16	280	6.4	220	3.9	110	2.7		3.2
17	260	6.2	230	3.6	110	2.5		3.2
18	240	6.2	240	---	---	---		3.2
19	220	5.3						3.2
20	230	4.5						3.2
21	(240)	3.8						3.0
22	(250)	3.3						3.0
23	---	3.0						3.0

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds. Mobile unit.

Table 11

San Francisco, California (37.4°N, 122.2°W) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.2						2.9
01	280	3.2						2.9
02	280	3.2						2.9
03	280	3.1						2.9
04	270	3.1						2.9
05	270	3.0						3.0
06	270	3.2						3.1
07	270	4.4	250	3.1	---	---		3.2
08	280	5.2	230	3.6	120	2.5	2.7	3.2
09	310	5.3	210	4.0	110	2.8	2.7	3.1
10	340	5.6	210	4.2	110	3.0	3.2	3.0
11	330	5.8	210	4.2	110	3.1		3.0
12	330	6.4	210	4.3	110	3.2		3.0
13	340	6.4	220	4.3	120	3.2		3.0
14	300	6.5	220	4.2	120	3.1		3.2
15	280	6.1	220	4.1	120	3.0		3.2
16	270	5.9	230	3.8	120	2.7		3.2
17	250	5.8	230	---	120	2.2		3.3
18	230	5.4						3.4
19	230	4.2						3.2
20	250	3.6						3.1
21	270	3.2						3.0
22	280	3.3						2.9
23	270	3.2						3.0

Time: 120.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 12

White Sands, New Mexico (32.3°N, 106.5°W) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.2						2.9
01	280	3.2						2.9
02	270	3.2						3.0
03	260	3.2						3.0
04	260	3.1						3.0
05	280	3.0						3.0
06	260	3.3						3.1
07	250	4.8	240	---	120	1.9		3.3
08	270	5.4	220	3.7	110	2.4	3.0	3.3
09	300	5.7	210	4.0	100	2.8	3.2	3.2
10	300	6.0	200	4.2	100	3.0	3.3	3.1
11	320	6.9	200	4.3	100	3.1	3.4	3.0
12	300	7.4	200	4.3	110	3.2	3.3	3.0
13	300	7.4	220	4.3	110	3.2	3.0	3.1
14	290	7.3	220	4.3	110	3.1	3.2	3.1
15	290	7.1	220	4.2	110	3.0	2.7	3.2
16	270	6.9	220	3.8	110	2.7	2.4	3.2
17	250	6.9	240	---	110	2.2	3.1	3.3
18	230	6.2					2.8	3.4
19	220	4.5					2.3	3.3
20	250	3.7					2.3	3.1
21	270	3.3					2.1	3.0
22	280	3.3						3.0
23	290	3.3					2.1	2.9

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 13

Baton Rouge, Louisiana (30.5°N, 91.2°W) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.6						2.9
01	300	3.5						2.9
02	280	3.6						2.9
03	280	3.3						3.0
04	280	3.2						2.9
05	300	3.2						2.9
06	270	3.6						3.0
07	260	5.1	240	---	130	2.1		3.3
08	280	5.5	240	---	120	2.5	3.9	3.2
09	300	6.0	220	(4.0)	120	(2.8)	4.7	3.1
10	330	6.3	210	4.4	110	3.0	4.0	3.0
11	330	7.1	210	4.5	110	3.2	4.0	3.0
12	320	7.7	240	4.5	110	3.3	3.7	3.0
13	310	8.4	240	4.4	120	3.2	4.2	3.0
14	300	8.0	230	4.4	120	3.2	4.0	3.0
15	300	8.0	240	4.3	120	2.9	4.6	3.1
16	280	7.5	240	(4.0)	120	2.7	3.9	3.2
17	260	7.2	250	---	130	2.2		3.2
18	240	6.6						3.3
19	240	5.0						3.2
20	270	3.7						2.9
21	300	3.6						2.9
22	300	3.6						2.8
23	300	3.6						2.9

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 14

Okinawa I. (26.3°N, 127.8°E) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.6						2.8
01	280	4.6						2.9
02	270	4.3						3.0
03	250	3.7						3.1
04	270	3.0						3.0
05	(280)	2.7						3.0
06	280	3.8						3.1
07	250	6.2	---	---	130	2.0	2.0	3.4
08	260	7.2	250	---	120	2.5	3.2	3.2
09	290	8.2	240	---	120	(3.0)	3.8	3.1
10	310	9.4	230	---	120	(3.2)	4.2	2.9
11	320	10.9	240	4.5	120	3.3	4.7	2.8
12	320	12.8	(240)	4.5	120	3.3	4.7	3.0
13	310	13.7	250	(4.5)	120	3.3	4.4	3.0
14	300	14.2	250	---	120	3.3	4.5	3.0
15	290	13.2	250	---	120	3.1	4.4	3.0
16	280	12.2	250	---	120	2.8	3.8	3.1
17	260	11.4	260	---	130	2.3	3.5	3.2
18	250	9.6					3.2	3.2
19	230	8.0					2.9	3.3
20	(250)	5.9					3.0	2.9
21	(300)	4.8						2.6
22	(320)	4.8						2.7
23	320	4.8						2.7

Time: 127.5°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 15

Maui, Hawaii (20.8°N, 156.5°W) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.6						3.0
01	260	3.4						3.0
02	270	3.1						3.0
03	250	2.9					1.6	3.2
04	260	2.8						3.2
05	270	2.4					1.8	3.0
06	280	2.6					1.7	2.8
07	250	5.2			130	1.7	1.5	3.3
08	(260)	6.7	240	---	120	2.4	3.1	3.2
09	(290)	7.6	220	---	120	2.8	3.5	2.9
10	300	9.1	210	4.5	120	3.0	4.4	2.9
11	310	9.9	210	(4.6)	120	3.2	4.6	2.8
12	340	11.0	210	4.7	120	3.3	4.3	2.8
13	320	12.3	210	4.7	120	3.3	4.2	2.9
14	300	13.2	220	4.6	110	3.3	3.9	3.0
15	280	13.1	240	4.5	110	3.1	3.6	3.1
16	270	12.2	240	4.2	120	2.9	4.0	3.2
17	250	11.9	240	---	120	2.4	3.9	3.2
18	230	10.1			---	---	4.1	3.4
19	220	7.0					3.9	3.3
20	240	5.5					2.7	2.9
21	260	4.1					2.0	3.0
22	280	3.8					1.7	2.8
23	280	3.7						2.9

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 16

Puerto Rico, W.I. (18.5°N, 67.2°W) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	4.3					1.8	3.0
01	260	4.4						3.1
02	250	4.4						3.2
03	230	4.0						3.3
04	240	3.6						3.1
05	250	3.2						3.0
06	(<270)	3.1						2.9
07	230	4.9	---	---	(120)	1.8		3.5
08	240	5.8	220	---	100	(2.4)		3.4
09	270	6.6	220	---	100	2.8		3.3
10	280	7.8	220	(4.4)	100	3.1		3.2
11	280	8.9	220	(4.5)	100	3.3		3.1
12	280	9.4	210	4.5	100	3.4		3.1
13	280	9.5	220	4.5	100	3.4		3.1
14	280	9.9	220	(4.5)	100	3.3		3.2
15	270	9.9	220	(4.4)	100	3.2		3.2
16	260	9.5	220	---	100	3.0	4.0	3.3
17	250	8.6	220	---	100	2.5	3.8	3.4
18	220	8.1	230	---	110	---	3.2	3.4
19	210	6.8					2.6	3.4
20	220	5.2						3.1
21	240	4.6						3.0
22	280	4.2						2.9
23	290	4.2						2.9

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 17

Panama Canal Zone (9.4°N, 79.9°W) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.0					2.7	2.8
01	260	4.3					2.0	3.1
02	240	3.6					2.2	3.1
03	240	3.3					2.7	3.1
04	270	2.8					2.7	2.8
05	280	2.8					3.0	2.8
06	300	(3.0)					2.9	2.7
07	260	5.3	---	---	130	1.9	3.9	3.2
08	280	6.7	240	---	120	2.6	3.4	3.0
09	310	7.9	240	4.5	120	3.0	4.1	2.9
10	330	9.0	240	4.7	110	3.3	4.1	2.8
11	330	10.3	220	4.7	110	3.5	4.2	2.8
12	340	10.8	220	4.7	110	3.5	4.1	2.8
13	350	11.6	220	4.7	110	3.5	3.9	2.7
14	330	12.7	220	4.7	110	3.4	4.5	2.8
15	300	13.8	220	4.6	110	3.2	4.4	3.0
16	280	13.4	240	4.4	110	3.0	4.6	3.0
17	270	12.0	250	---	120	2.6	4.2	3.0
18	240	10.6			---	---	3.7	3.1
19	230	9.0					3.6	3.0
20	250	6.9					3.9	2.9
21	250	5.6					3.0	2.8
22	270	4.4					2.8	2.7
23	300	3.8					2.8	2.7

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 18

Huancayo, Peru (12.0°S, 75.3°W) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	210	8.4					4.0	3.4
01	210	7.6					3.8	3.3
02	230	5.6					3.7	3.2
03	240	4.7					3.6	3.3
04	240	3.8					3.8	3.4
05	250	3.6						3.3
06	250	4.1					3.8	3.2
07	230	7.3			110	2.2	5.1	3.4
08	(260)	8.9	220	---	110	2.8	8.1	3.3
09	290	9.6	210	(4.2)	110	---	11.1	2.9
10	300	9.6	200	4.5	100	---	12.0	2.6
11	320	8.7	200	4.6	100	---	12.3	2.6
12	320	8.4	200	4.6	100	---	12.4	2.6
13	330	8.3	190	4.6	100	---	12.2	2.6
14	310	8.7	190	4.4	100	---	12.2	2.6
15	300	9.0	190	---	100	---	11.8	2.6
16	280	9.1	200	---	100	---	10.2	2.7
17	230	9.3			110	---	8.6	2.6
18	260	9.6			120	---	5.5	2.7
19	290	9.2						2.7
20	280	8.8						2.7
21	240	8.6						2.9
22	230	8.6						3.1
23	220	8.8						3.2

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 19

Resolute Bay, Canada (74.7°N, 94.9°W) February 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.2						3.0
01	250	2.8						2.9
02	260	3.0						2.9
03	250	3.3						2.9
04	270	3.0						3.0
05	270	3.0						3.0
06	260	3.2						3.0
07	250	3.3						2.9
08	260	3.8						3.0
09	250	3.4						3.0
10	250	3.6						3.0
11	250	3.8						3.0
12	260	4.2			---	---		3.0
13	260	4.4			---	---		3.0
14	250	4.4			---	---		3.0
15	250	4.2			---	---		3.0
16	240	4.5						3.0
17	250	4.2						2.9
18	250	4.0						2.9
19	250	3.9						2.9
20	260	3.7						3.0
21	270	3.5						2.9
22	260	3.4						2.9
23	260	3.4						2.9

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 20

Kiruna, Sweden (67.8°N, 20.5°E) February 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	(2.9)					4.1	
01	---	(3.0)					3.5	
02	---	2.8					4.1	
03	(300)	3.0					3.4	
04	(310)	3.0					2.7	
05	(280)	3.2					2.2	
06	(280)	2.7						
07	260	3.1					1.0	
08	240	3.8			---	---		
09	245	4.4			---	---		
10	240	5.0	---	---	---	---		
11	240	5.6	---	---	---	2.3		
12	240	5.7	---	---	---	2.2		
13	250	5.5	---	---	---	2.1		
14	240	5.2			---	---		
15	235	4.5			---	---		
16	220	4.2						
17	240	3.9					2.4	
18	250	3.2					2.3	
19	(260)	3.2					4.0	
20	(260)	(2.8)					4.2	
21	---	(3.0)					4.0	
22	---	(3.2)					4.2	
23	---	(2.9)					3.9	

Time: 15.0°E.
Sweep: 0.8 Mc to 15.0 Mc in 30 seconds.

Table 21

Fairbanks, Alaska (64.9°N, 147.8°W) February 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					5.2	---
01	---	---					5.7	---
02	---	---					6.2	---
03	---	---					6.0	---
04	---	---					5.9	---
05	(310)	(3.0)					5.5	(2.8)
06	(300)	(3.0)			---	---	5.0	(2.9)
07	(290)	(3.0)			---	---	3.0	(3.0)
08	(260)	(3.5)			---	---		(3.1)
09	260	4.2			---	---		3.2
10	260	4.6	---	---	---	---		3.2
11	260	5.1	---	---	---	---		3.2
12	260	5.2	---	---	---	---		3.2
13	260	5.4	---	---	---	---		3.2
14	240	5.6	---	---	---	---		3.2
15	250	5.4			---	---		3.3
16	240	5.4			---	---		3.3
17	250	4.8			---	---		3.2
18	240	4.3						(3.1)
19	(240)	(3.0)					3.2	(3.3)
20	(280)	(2.5)					2.6	---
21	---	---					5.0	---
22	---	---					5.0	---
23	---	---					5.0	---

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 22

Baker Lake, Canada (64.3°N, 96.0°W) February 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.8					7.5	2.7
01	300	2.8					6.9	2.7
02	300	2.7					5.1	2.7
03	310	2.7			---	---	5.0	2.7
04	330	2.7			150	1.8	4.8	2.6
05	350	(2.6)			160	(1.8)	5.0	2.7
06	300	2.7			120	(1.7)	4.5	2.6
07	300	(2.8)			120	1.9	6.0	2.7
08	320	3.2	---	---	120	2.3	7.0	2.8
09	310	3.5	---	---	120	2.4	4.0	2.8
10	310	4.0	---	---	110	2.9		2.9
11	300	4.4	---	---	120	3.1		2.9
12	300	5.0	310	3.4	120	2.9		2.8
13	320	5.2	300	3.5	130	3.0		2.8
14	320	5.8	290	3.3	120	2.6		2.7
15	300	5.2	290	3.1	120	2.5		2.8
16	300	5.0	---	---	130	2.4		2.8
17	300	4.3	---	---	120	2.5	2.4	2.8
18	320	3.9	---	---	130	2.4	4.2	2.6
19	300	3.8	---	---	130	(1.8)	3.7	2.7
20	300	3.5			130	1.8	5.0	2.7
21	290	3.3			---	---	5.0	2.8
22	300	3.0			---	---	5.2	2.7
23	300	2.9					8.0	2.7

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 23

Churchill, Canada (58.8°N, 94.2°W) February 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	(2.9)			---	---	6.1	---
01	320	(3.0)			---	---	6.0	---
02	320	(3.0)			---	(2.6)	5.0	---
03	(310)	(2.6)			120	(2.2)	5.0	---
04	(310)	(3.0)			120	2.6	4.4	---
05	(300)	(3.4)			120	2.7	2.7	(3.2)
06	---	(3.5)			120	2.8	3.8	---
07	(400)	(4.1)			110	3.8	4.0	---
08	330	4.0	---	---	120	3.2	4.8	(3.0)
09	280	4.6	---	---	110	3.0	4.0	3.3
10	290	5.0	---	---	110	2.7		3.2
11	280	5.4	240	---	110	2.7		3.2
12	300	5.5	230	---	120	2.7		3.0
13	300	6.0	250	3.7	---	---		3.0
14	300	6.3	240	3.6	120	(2.6)		3.0
15	280	5.8	240	---	130	2.5		3.1
16	260	5.2	---	---	120	2.7		3.0
17	260	5.0			130	2.6		3.0
18	280	4.3			120	2.6	3.6	(3.1)
19	300	3.8			120	2.5	3.5	3.0
20	300	(3.6)			120	2.4	5.4	(3.0)
21	260	(3.4)			120	(2.3)	7.4	(3.0)
22	300	(3.0)			---	---	7.0	(3.2)
23	300	(2.8)			---	---	7.0	(3.2)

Time: 90.0°W.
Sweep: 0.6 Mc to 20.0 Mc in 15 seconds.

Table 24

Fort Chimo, Canada (58.1°N, 68.3°W) February 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(280)	3.0			100	2.9	4.6	---
01	(300)	2.7			100	2.6	4.2	---
02	---	(2.8)			100	3.1	4.0	---
03	---	(3.3)			100	3.3	4.0	---
04	(310)	(3.0)			100	3.0	4.0	---
05	(300)	(2.7)			100	2.8	4.1	---
06	(340)	(2.7)			100	2.8	4.5	(3.0)
07	270	3.6			100	2.7	4.0	3.2
08	260	4.4			100	2.5		3.4
09	250	4.8	---	---	100	2.7		3.2
10	260	5.3	---	3.6	100	2.6		3.2
11	290	5.9	240	3.7	100	2.7		3.0
12	300	6.0	220	3.8	110	2.7		3.0
13	300	5.5	230	3.8	100	2.6		3.0
14	270	5.2	200	3.6	100	2.4		3.1
15	250	5.1	240	---	110	2.3		3.0
16	260	4.2	---	---	100	2.5	1.7	3.1
17	260	3.8			100	2.8	1.3	3.0
18	300	3.3			100	2.8	4.6	2.9
19	260	3.2			100	2.8	4.6	(3.0)
20	(240)	3.2			---	---	5.9	(3.0)
21	(300)	2.8			100	2.3	5.0	---
22	270	2.8			---	---	5.0	(3.0)
23	(280)	2.8			---	---	5.1	---

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 25

Prince Rupert, Canada (54.3°N, 130.3°W) February 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	3[illegible]0	1.7						3.0
01	310	1.8					1.3	3.0
02	300	1.9					1.4	3.0
03	320	1.9					2.0	2.9
04	330	1.8					2.4	3.0
05	340	1.9					2.0	2.8
06	350	1.9					1.4	2.8
07	300	2.0			---	---		2.9
08	280	3.0			---	E		3.0
09	240	4.2	---	---	110	2.0		3.1
10	260	5.0	230	3.3	110	2.3		3.1
11	290	5.4	220	3.6	110	2.5		3.0
12	290	5.8	220	3.7	110	2.7		3.0
13	290	6.2	220	3.8	110	2.7		3.0
14	280	6.5	220	3.7	120	2.7		3.0
15	250	6.5	230	---	120	2.4		3.1
16	240	5.8	240	---	110	2.2		3.2
17	240	6.0	---	---	120	2.0		3.1
18	230	5.2			---	E		3.1
19	230	4.1						3.0
20	240	3.0						3.0
21	270	2.0						3.0
22	290	1.9						3.0
23	280	1.8						3.0

Time: 120.0°W.
Sweep: 0.6 Mc to 20.0 Mc in 15 seconds.

Table 26

De Bilt, Holland (52.1°N, 5.2°E) February 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	< 300	(2.4)						(2.9)
01	< 300	(2.4)						(2.9)
02	< 290	(2.5)						---
03	280	(2.2)						---
04	(270)	(2.0)						---
05	(270)	(1.9)					2.0	---
06	---	(2.0)						(3.0)
07	235	3.5			---	E		3.2
08	225	4.9	220	---	115	2.0	2.0	3.4
09	220	5.8	215	3.6	110	2.3		3.4
10	260	6.2	210	3.6	110	2.5		3.4
11	260	6.1	210	3.8	110	2.7		3.4
12	250	6.6	210	3.9	110	2.7		3.4
13	< 250	6.4	205	3.9	110	2.7		3.4
14	240	6.2	210	3.6	110	2.5		3.4
15	220	5.6	220	---	110	2.2		3.4
16	220	5.8	---	---	120	2.0		3.5
17	210	5.3			---	E		3.4
18	220	4.7						3.2
19	235	3.8						3.1
20	270	2.9						2.9
21	290	(2.6)						(3.0)
22	(250)	(2.[illegible])						(2.9)
23	(280)	(2.4)						(2.9)

Time: 0.0°.
Sweep. 1.4 Mc to 16.0 Mc in [illegible] minutes, automatic operation.

Table 27

Lindau/Harz, Germany (51.6°N, 10.1°E) February 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.6					2.2	[illegible]
01	280	2.6					2.1	2.9
02	280	2.6					2.2	2.9
03	280	2.6					2.2	2.9
04	280	2.4					2.2	2.9
05	280	2.0					2.2	2.[illegible]
06	290	2.0					2.8	3.0
07	270	2.5					2.1	3.0
08	230	4.6	---		---	E	2.0	3.[illegible]
09	230	> 5.6	220		[illegible]	2.2	3.2	3.[illegible]
10	240	6.1	210		120	2.4	3.2	[illegible]
11	240	6.5	210		110	2.6	3.4	3.[illegible]
12	240	6.6	210		110	2.7	3.[illegible]	[illegible]
13	240	6.4	210		100	2.7	3.4	3.4
14	240	6.6	210		100	2.6	3.1	3.3
15	240	6.2	220		110	2.4	3.2	3.4
16	230	5.9	230		1[illegible]	2.2	2.9	3.4
17	220	5.4	---		---	E	3.1	3.4
18	220	5.0					2.6	3.2
19	220	4.4					2.3	3.2
20	250	3.5					2.[illegible]	3.1
21	280	2.9					2.1	3.0
22	3[illegible]	2.8					2.1	[illegible]
23	290	2.6					2.1	2.[illegible]

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in [illegible] minutes.

Table 28

Winnipeg, Canada (49.9°N, 97.4°W) February 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	3[illegible]0	2.4					1.7	2.9
01	300	2.2					3.3	2.9
02	300	2.4					3.8	2.9
03	330	2.2					4.0	(2.8)
04	320	2.4					3.5	2.9
05	320	2.4					3.2	(2.9)
06	(300)	(2.6)			---	---	3.0	(3.0)
07	300	2.4			---	---		(2.9)
08	260	3.9			---	---		3.2
09	250	4.7	[illegible]	---	120	2.2		3.2
10	260	5.4	[illegible]	---	110	2.5		3.2
11	290	5.9	[illegible]	4.0	110	2.7		3.2
12	290	6.2	[illegible]	3.9	110	2.8		3.2
13	300	6.6	[illegible]	4.0	110	2.8		3.2
14	280	6.9	[illegible]	4.0	110	2.7		3.2
15	260	7.0	220	---	110	2.6		3.3
16	260	6.5	240	---	130	2.3		3.3
17	250	6.2	---	---	---	---		3.3
18	240	5.3			---	---		3.2
19	250	4.1						3.0
20	260	3.5						3.1
21	300	2.9						3.0
22	300	2.5						3.0
23	300	2.5						3.0

Time: 90.0°W.
Sweep: 0.6 Mc to 20.0 Mc in 15 seconds.

Table 29

St. John's, Newfoundland (47.6°N, 52.7°W) February 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	3[illegible]	2.4						2.9
01	300	2.4						2.9
02	300	2.2						2.9
03	300	2.0						3.0
04	300	2.1						3.0
05	300	2.0						3.1
06	300	2.2			---	---		3.1
07	250	4.0	---	---	120	1.9		3.4
08	230	5.0	240	2.9	110	2.3		3.4
09	250	5.6	220	3.6	110	2.5		3.4
10	290	6.0	210	3.9	110	2.8		3.3
11	280	6.4	210	4.0	110	2.8		3.3
12	290	6.6	210	4.0	110	2.9		3.3
13	280	6.7	220	4.0	110	2.8		3.3
14	280	6.8	220	3.8	110	2.7		3.3
15	260	6.7	230	3.5	120	2.4		3.3
16	250	6.1	240	2.9	[illegible]	2.0		3.3
17	240	5.6			---	---		3.3
18	240	5.5						3.2
19	250	4.4						3.2
20	260	3.8						3.2
21	300	3.2						3.0
22	300	2.8						2.9
23	300	2.7						3.0

Time: 60.0°W.
Sweep: 0.6 Mc to 20.0 Mc in 15 seconds.

Table 30

Schwarzenburg, Switzerland (46.8°N, 7.3°E) February 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.0						3.3
01	285	3.0						3.3
02	300	2.9						3.2
03	270	3.0						3.2
04	265	2.9						3.3
05	250	2.5						3.3
06	255	2.2						3.5
07	250	2.6			---	---		3.5
08	210	4.2			100	2.0		3.8
09	210	5.5			100	2.2		3.9
10	200	6.4			100	2.5		3.9
11	210	6.8			100	2.8		3.8
12	200	7.0			100	2.8		3.8
13	205	6.8			100	2.9		3.9
14	215	6.5			100	2.8		3.8
15	200	6.5			100	2.6		3.8
16	215	6.5			100	2.4		3.8
17	210	6.0			---	---		3.8
18	210	5.1						3.7
19	205	4.6						3.7
20	225	3.8						3.6
21	250	3.4						3.5
22	270	3.2						3.3
23	260	3.2						3.3

Time: 15.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 31

Ottawa, Canada (45.4°N, 75.7°W) February 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.4						2.8
01	320	2.3						2.8
02	300	2.2						2.8
03	300	1.9						2.8
04	300	2.0						2.8
05	310	2.0						2.8
06	(300)	1.9						2.9
07	260	3.1			110	1.9		3.0
08	240	4.6	---	---	120	2.1		3.2
09	250	5.3	220	3.2	110	2.4		3.2
10	260	6.0	220	3.8	120	2.7		3.1
11	280	6.1	220	3.9	110	2.3		3.1
12	280	6.6	220	4.0	110	2.8		3.1
13	280	6.7	220	4.0	110	2.9		3.0
14	280	7.0	220	3.9	110	2.3		3.0
15	270	7.0	230	3.7	120	2.6		3.0
16	250	6.7	240	---	120	2.2		3.1
17	240	6.2			---	---		3.0
18	240	5.5						3.0
19	240	5.0						3.0
20	250	3.9						3.0
21	280	3.0						2.9
22	300	2.7						2.9
23	300	2.7						2.8

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 32

Reykjavik, Iceland (64.1°N, 21.8°W) January 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					4.4	---
01	---	---					4.6	---
02	(340)	(3.4)					4.2	---
03	---	---					4.6	---
04	(310)	(2.5)					3.9	(2.9)
05	290	2.8					3.0	(3.0)
06	280	(2.8)					2.2	3.2
07	(270)	(2.4)					(2.2)	(3.2)
08	(260)	(2.3)						(3.1)
09	(240)	2.9						3.2
10	240	4.0						3.3
11	220	4.8	---	---				3.5
12	230	5.4						3.5
13	230	5.6						3.4
14	230	5.2						3.3
15	240	5.0						3.3
16	220	4.7					2.0	3.3
17	250	(3.3)					3.0	(3.1)
18	(260)	(3.0)					4.0	---
19	(310)	(2.7)					4.1	---
20	---	---					4.2	---
21	(300)	---					4.2	---
22	---	---					4.5	---
23	---	---					5.5	---

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 33

Wakkanai, Japan (45.4°N, 141.7°E) January 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	3.2						2.8
01	320	3.1						2.7
02	310	3.2						2.7
03	300	3.3						2.8
04	290	3.0						2.8
05	280	3.0						2.8
06	300	2.6						2.9
07	290	4.2			---	---		2.9
08	270	5.7			120	2.2		3.2
09	280	7.4			130	2.6		3.1
10	280	8.4			140	2.8		3.1
11	270	8.2	---	---	120	2.8		3.2
12	280	7.7	260	4.0	130	---		3.1
13	280	7.1	---	---	120	2.8		3.1
14	280	7.2	---	---	130	2.6		3.2
15	270	6.5			120	---		3.2
16	260	5.6			---	---		3.2
17	280	4.4						3.0
18	290	4.0						3.0
19	300	3.2						3.0
20	300	3.0						2.8
21	370	3.0						2.7
22	350	3.0						2.6
23	350	3.2						2.7

Time: 135.0°E.
Sweep: 1.0 Mc to 15.5 Mc in 2 minutes.

Table 34

Akita, Japan (39.7°N, 140.1°E) January 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.2					1.4	2.9
01	290	3.2					1.8	2.9
02	260	3.3					1.4	3.1
03	250	3.1					1.6	3.1
04	250	3.0					1.2	3.0
05	280	2.8						3.0
06	270	2.6						3.0
07	240	4.6			130	1.7		3.3
08	220	6.1	---	---	120	2.0		3.5
09	240	7.3	230	---	110	2.6		3.3
10	250	8.9	230	4.0	110	2.8		3.4
11	240	9.2	230	4.2	110	2.9		3.4
12	230	7.8	220	4.2	110	3.0		3.5
13	230	7.0	220	4.0	110	2.9		3.4
14	230	7.0	220	3.7	110	2.8		3.4
15	230	6.6	220	3.3	110	2.4		3.5
16	220	5.8			120	2.0		3.5
17	220	4.5					1.7	3.3
18	230	3.8					2.0	3.2
19	230	3.7						3.2
20	250	3.2						3.2
21	290	2.9						2.9
22	300	3.0					2.2	2.8
23	300	3.4						2.8

Time: 135.0°E.
Sweep: 1.0 Mc to 17.0 Mc in 15 minutes, manual operation.

Table 35

Tokyo, Japan (35.7°N, 139.5°E) January 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.0					2.0	2.8
01	300	3.1					2.0	2.9
02	260	3.3					2.0	3.0
03	260	3.0					1.8	3.0
04	290	2.6					1.7	2.9
05	300	2.6						2.9
06	280	2.6						3.1
07	240	4.7	---	---	150	1.6		3.3
08	240	6.3	240	---	120	2.2		3.4
09	240	7.0	240	---	110	2.6		3.3
10	270	9.3	230	4.4	120	2.9	3.6	3.3
11	260	10.0	230	4.5	110	3.0		3.3
12	260	8.4	230	---	110	3.1		3.4
13	260	7.5	230	4.3	110	3.0		3.3
14	260	7.0	230	---	110	2.9		3.3
15	250	7.1	230	---	110	2.5		3.4
16	230	5.9	---	---	110	2.1		3.4
17	230	4.8			140	1.5	2.0	3.3
18	240	4.0					1.7	3.1
19	250	3.7						3.2
20	250	3.4					1.8	3.2
21	270	3.0						3.0
22	310	2.8					1.7	2.8
23	320	3.0						2.8

Time: 135.0°E.
Sweep: 1.0 Mc to 17.2 Mc in 2 minutes.

Table 36

Yamagawa, Japan (31.2°N, 130.6°E) January 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.0					2.2	2.8
01	280	3.0					2.2	3.0
02	260	3.2					2.5	3.1
03	240	3.2					2.5	3.3
04	230	2.7					2.0	3.3
05	300	2.4					2.2	2.8
06	290	2.4					1.9	3.0
07	250	3.2						3.1
08	230	6.0			120	1.9		3.5
09	230	6.7	210	---	110	2.5	3.4	3.5
10	250	7.6	220	---	100	2.8	4.3	3.3
11	250	9.3	220	4.5	100	3.1	4.4	3.4
12	250	9.6	220	4.6	100	3.2	4.5	3.4
13	250	8.4	220	4.5	100	3.2	4.3	3.4
14	250	8.0	210	---	100	3.0	4.0	3.4
15	250	7.3	220	---	100	2.9	3.9	3.3
16	230	6.8	220	---	100	2.5	3.9	3.4
17	220	6.5	---	---	100	1.8	3.2	3.4
18	210	4.7					3.0	3.4
19	230	4.1					2.5	3.2
20	240	4.2					2.3	3.2
21	240	3.4					2.2	3.2
22	260	2.8					2.2	3.0
23	300	2.9					2.2	2.8

Time: 135.0°E.
Sweep: 1.0 Mc to 22.0 Mc in 2 minutes.

Table 37

Guam I. (13.6°N, 144.9°E) January 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	5.4						3.1
01	260	5.0						3.2
02	250	4.6						3.2
03	240	3.8						3.3
04	250	3.4						3.2
05	270	2.6						3.2
06	(270)	2.8						3.2
07	260	4.6			---	---		3.3
08	(270)	7.2	240	---	120	2.5		3.2
09	290	9.4	220	---	110	2.9	3.1	3.1
10	310	9.8	220	4.5	110	3.1	4.1	2.9
11	310	8.9	210	4.7	(110)	(3.3)	4.3	2.6
12	330	8.4	200	4.7	(110)	---	4.4	2.4
13	340	8.4	200	(4.7)	(120)	---	4.2	2.4
14	340	8.6	220	---	---	---	4.1	2.5
15	320	9.0	230	---	(110)	---		2.7
16	300	9.8	240	---	(120)	---		2.8
17	270	10.1	240	---	(120)	2.5		3.0
18	250	9.8					3.0	3.2
19	240	9.2						3.1
20	240	8.8					2.7	3.1
21	240	8.5					2.7	3.1
22	240	7.2					2.7	3.3
23	230	6.2					2.4	3.3

Time: 150.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 38

Rarotonga I. (21.3°S, 159.8°W) January 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	8.8					3.2	3.0
01	250	7.5					3.0	2.9
02	270	6.1					3.0	2.8
03	300	5.7					3.0	2.8
04	300	5.7					3.1	2.8
05	280	5.0					3.0	2.8
06	280	5.6	---	---	---	E	3.5	2.9
07	250	6.9	250	4.2	120	2.5	3.9	3.0
08	300	7.5	240	4.5	110	3.0	4.3	3.0
09	320	8.3	220	4.9	110	3.3	4.6	2.8
10	350	9.4	210	5.0	110	3.5	5.3	2.7
11	360	11.0	210	5.0	110	3.6	4.8	2.7
12	340	12.5	220	5.0	110	3.6	5.1	2.8
13	330	12.6	230	5.0	110	3.6	4.9	2.8
14	320	13.3	240	4.9	110	3.6	4.7	2.9
15	310	12.2	220	4.8	110	3.4	4.3	3.0
16	300	12.0	240	4.6	110	3.2	4.4	3.0
17	280	10.0	250	4.2	110	2.9	4.2	3.0
18	250	8.2	---	---	---	2.3	4.1	3.0
19	280	7.5			---	E	4.1	2.6
20	330	8.2					4.2	2.6
21	320	8.4					4.0	2.7
22	320	8.1					3.9	2.7
23	300	8.3					3.6	2.8

Time: 157.5°W.
Sweep: 2.0 Mc to 16.0 Mc, manual operation.

Table 39

Johannesburg, Union of S. Africa (26.2°S, 28.1°E) January 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	4.6					2.2	2.9
01	270	4.2					2.2	2.9
02	260	3.8					2.2	2.9
03	270	3.7					2.4	3.0
04	260	3.3					2.0	3.0
05	260	3.3					1.9	3.0
06	250	4.9	240	---	120	2.0	2.7	3.2
07	290	5.6	220	4.0	110	2.6	3.5	3.0
08	350	6.3	220	4.5	110	3.0	3.8	2.8
09	340	7.0	210	4.6	110	3.4	4.1	2.8
10	350	7.6	200	4.8	110	3.5	4.0	2.8
11	340	8.5	200	4.9	110	3.7	4.2	2.8
12	330	8.5	200	4.9	110	3.8	4.3	2.8
13	340	8.5	210	4.9	110	3.7	4.1	2.8
14	330	8.7	210	4.8	110	3.6	4.0	2.9
15	310	8.7	210	4.6	110	3.5	4.0	2.9
16	300	8.3	220	4.5	110	3.3	3.8	3.0
17	280	7.6	220	4.1	110	2.9	3.7	3.1
18	260	6.9	230	3.4	120	2.4	3.1	3.1
19	250	6.5	---	---	---	---	2.8	3.0
20	250	6.5					2.5	3.0
21	240	5.8					2.0	3.0
22	260	5.0					2.2	2.9
23	280	4.7					2.4	2.8

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 40

Capetown, Union of S. Africa (34.2°S, 18.3°E) January 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.9					2.1	2.8
01	300	3.9					2.2	2.8
02	290	3.8					2.1	2.8
03	280	3.7					2.0	2.9
04	270	3.5					1.9	2.9
05	280	3.2					1.9	2.9
06	260	4.0	---	---	120	1.8	2.0	3.1
07	280	5.1	240	3.7	120	2.2	3.0	3.0
08	350	5.8	230	4.1	110	2.8	3.6	2.8
09	350	6.8	220	4.5	110	3.1	3.7	2.8
10	360	6.9	220	4.6	110	3.4	3.8	2.8
11	350	7.7	200	4.8	110	3.6	4.1	2.8
12	350	7.8	210	4.8	110	3.6	4.0	2.8
13	340	8.0	210	4.8	110	3.6	4.5	2.8
14	350	7.9	210	4.8	110	3.6	4.3	2.8
15	340	7.6	210	4.7	110	3.5	3.9	2.9
16	330	7.2	210	4.6	110	3.3	4.0	2.9
17	310	7.1	220	4.4	110	3.1	3.7	3.0
18	300	6.8	220	4.0	110	2.8	3.3	3.1
19	260	6.7	250	3.4	120	2.2	2.9	3.1
20	250	6.4			---	---	2.0	3.1
21	230	5.8						3.1
22	250	4.8					2.0	3.0
23	270	4.1						2.9

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 41

Christchurch, New Zealand (43.6°S, 172.7°E) January 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	5.3					3.2	2.7
01	280	4.7					3.8	2.8
02	280	4.2					3.2	2.8
03	280	3.5					3.2	2.8
04	290	3.1				---	3.1	2.9
05	270	3.5	---	---		1.4	3.5	3.0
06	280	4.2	250	3.6		2.3	4.4	3.0
07	380	4.8	240	4.0		2.7	5.2	3.0
08	380	5.5	230	4.3		3.0	5.6	2.9
09	350	5.9	220	4.5		3.2	6.2	3.0
10	370	6.0	220	4.6		3.4	6.6	3.0
11	360	5.9	240	4.7		3.5	6.5	2.9
12	390	6.0	220	4.7		3.5	5.9	2.9
13	360	6.2	220	4.7		3.5	5.2	2.9
14	380	6.1	220	4.6		3.5	6.0	2.9
15	350	6.2	230	4.6		3.3	4.8	2.9
16	350	6.3	240	4.4		3.1	4.4	2.9
17	330	6.7	240	4.2		2.8	4.4	2.9
18	290	6.8	250	3.7		2.4	3.2	3.0
19	270	7.0	270	2.9		1.6	3.0	3.0
20	260	6.3				1.2	3.0	2.8
21	270	6.2					2.5	2.8
22	280	6.0					2.9	2.8
23	280	5.8					2.8	2.8

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 42*

Inverness, Scotland (57.4°N, 4.2°W) December 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(350)	(1.8)						2.6
01	335	(1.5)					1.0	(2.6)
02	325	(1.5)						2.6
03	330	1.5					0.9	2.6
04	315	1.6					3.0	2.7
05	300	(2.0)					2.9	2.7
06	295	(1.9)					2.9	3.0
07	330	(2.2)					2.7	(2.8)†
08	285	(2.4)					2.8	(2.9)
09	245	4.0			120	1.8	3.1	3.2
10	230	5.7			125	2.0	2.9	3.3
11	230	6.4			135	2.1		3.4
12	235	7.0	285†		135	2.3	2.3	3.4
13	230	7.4			130	2.3		3.4
14	235	7.2	250†		150	2.1		3.4
15	220	6.3			140	1.9	2.4	3.4
16	230	5.8					1.6	3.3
17	250	4.8						3.2
18	260	3.6						3.2
19	280	(2.6)						3.0
20	315	(2.4)						2.8
21	340	2.2						2.8
22	360	(2.3)						2.7
23	365	(2.1)						2.7

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.
†One or two observations only.

Table 43*

Slough, England (51.5°N, 0.6°W) December 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	2.7					2.6	2.6
01	295	2.8					3.2	2.7
02	290	2.8					3.2	2.7
03	295	2.3					3.1	2.7
04	280	2.2					3.4	2.8
05	285	2.1					4.0	2.9
06	305	2.0					3.3	2.8
07	290	2.2					3.7	2.8
08	240	4.1			140	1.7	3.8	3.2
09	235	5.7	290#	3.2#	135	2.0	4.1	3.4
10	235	7.0	240	3.5	135	2.3	4.4	3.4
11	235	7.5	235	3.5	135	2.4	4.5	3.4
12	235	7.3	235	3.6	135	2.5	4.6	3.3
13	235	7.5	235	3.6	135	2.4	4.5	3.3
14	235	7.6	240#	3.4#	135	2.3	4.2	3.3
15	230	7.0	275#	3.7#	140	2.0	4.2	3.4
16	225	5.8			---	1.7#	3.9	3.3
17	230	5.0					2.9	3.2
18	245	4.1					2.4	3.1
19	265	3.0						3.0
20	285	2.9						2.8
21	305	2.6					2.3	2.8
22	310	2.8					2.5	2.7
23	320	2.8					2.5	2.6

Time: 0.0°.
Sweep: 0.55 Mc to 16.5 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.
#One or two observations only.

Table 44*

Singapore, British Malaya (1.3°N, 103.8°E) December 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	275	5.1						2.6
01	280	4.9						2.7
02	270	4.5						2.9
03	285	3.8						2.8
04	295	3.5						2.8
05	260	3.6						3.0
06	265	4.1						2.9
07	270	6.6	245		120	2.5		2.9
08	305	>7.4	230		120	2.9	3.9	2.6
09	325	8.3	215	(4.4)	(115)	(3.3)	4.0	2.5
10	360	8.8	210	(4.7)	(110)	(3.3)	4.0	2.2
11	375	9.0	210	4.8	(115)	(3.6)	4.0	2.1
12	395	9.4	210	4.8			4.1	2.1
13	365	9.7	210	4.7			4.0	2.3
14	345	10.0	205	(4.7)			4.0	2.3
15	360	10.1	220	(4.4)			3.9	2.3
16	340	10.1	235		(120)	(2.8)	4.2	2.4
17	305	10.4	255		(130)	(2.5)	4.0	2.4
18	280	10.2					3.9	2.4
19	275	9.4						2.5
20	315	9.2						2.6
21	270	9.6						3.0
22	230	8.3						3.2
23	250	5.5						2.8

Time: 105.0°E.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute.
*Average values except foF2 and fEs, which are median values.

Table 45

Reykjavik, Iceland (64.1°N, 21.8°W) November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	370	(3.6)					5.1	(3.0)
01	390	(3.9)					4.5	(2.9)
02	390	(3.8)					4.6	(2.8)
03	340	(3.7)					4.8	3.0
04	320	3.9					4.3	3.1
05	300	3.5			---	---	3.4	3.1
06	290	2.8			---	---		3.1
07	300	2.4			---	---		3.1
08	270	2.6			---	---		3.1
09	250	4.2			120	1.5		3.3
10	240	5.2	---	---	---	---		3.5
11	240	6.0	---	---	---	---		3.4
12	240	6.3	250	---	---	---		3.4
13	250	6.4	---	---	---	---		3.3
14	250	5.6	---	---	---	---		3.4
15	260	5.0			140	2.7		3.3
16	270	4.4			120	---	2.6	3.2
17	300	3.6			---	---	3.6	3.2
18	320	(3.4)					4.4	3.1
19	330	(4.1)					5.0	(3.2)
20	(370)	(3.8)					5.0	(2.8)
21	380	(3.5)					5.6	(3.0)
22	360	(3.7)					4.6	(3.0)
23	340	(3.7)					4.8	(3.0)

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 46*

Inverness, Scotland (57.4°N, 4.2°W) November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(365)	(2.2)						2.4
01	355	(2.0)						2.4
02	340	1.8						2.5
03	330	(2.0)						2.6
04	310	(1.9)						2.7
05	310	(1.9					2.9	2.7
06	300	(2.0)						2.8#
07	290	(2.4)						2.7#
08	245	3.9	(270)#	(3.1)#	140	1.8	2.3	3.0
09	235	5.4		3.1#	130	2.0	2.9	3.3
10	240	6.6	240#	3.5#	130	2.3		3.3
11	245	6.8	225	(3.7)#	130	2.4		3.4
12	235	7.4	230	3.7#	130	2.5		3.4
13	235	7.4	225		130	2.4		3.4
14	235	7.2			135	2.3		3.3
15	230	6.8			145	2.1		3.3
16	230	6.6			150	1.9		3.2
17	235	5.8						3.2
18	250	4.5						3.1
19	265	3.0						3.0
20	(310)	(2.1)						2.7
21	325	2.0						2.6
22	(360)	1.9						2.5
23	(360)	(2.0)						2.5

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.
#One or two observations only.

Table 47*

Slough, England (51.5°N, 0.6°W) November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	315	2.7					2.4	2.6
01	305	2.6					2.9	2.6
02	305	2.7					2.8	2.6
03	295	2.4					2.9	2.7
04	280	2.2					3.2	2.8
05	280	2.2					3.3	2.9
06	295	2.1					3.0	2.8
07	250	3.4			160	1.8	3.2	3.0
08	240	5.4	255	3.5	140	2.0	3.9	3.3
09	240	6.6	240	3.6	125	2.3	4.0	3.4
10	235	7.6	230	3.7	120	2.5	4.0	3.3
11	240	8.0	225	3.9	125	2.7	4.3	3.3
12	240	8.0	220	3.9	125	2.7	4.2	3.4
13	235	8.0	235	3.7	125	2.7	4.5	3.2
14	235	7.9	250#	3.6	125	2.5	4.4	3.3
15	230	7.4		3.4#	130	2.2	3.6	3.3
16	230	6.9			145	1.8	3.2	3.3
17	225	6.1					3.2	3.2
18	230	4.8					3.0	3.2
19	250	3.6					2.4	3.0
20	295	2.8					2.4	2.8
21	320	2.7					2.4	2.7
22	330	2.8					2.2	2.6
23	330	2.8						2.6

Time: 0.0°.
Sweep: 0.55 Mc to 16.5 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.
#One or two observations only.

Table 48

Fribourg, Germany (48.1°N, 7.8°E) November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.3					2.0	2.7
01	290	3.2					2.0	2.8
02	290	3.1					2.0	2.8
03	270	3.1					2.0	2.8
04	260	2.8					2.0	2.9
05	<240	2.7					2.1	3.1
06	270	2.5					1.8	2.9
07	235	4.2			---	<1.6	2.2	3.2
08	225	6.1	---	---	123	2.0	2.2	3.4
09	225	7.4	235	---	115	2.4	3.0	3.5
10	230	8.0	220	---	111	2.7	3.2	3.4
11	240	8.3	225	---	110	2.8	3.0	3.4
12	235	8.8	225	(4.1)	115	2.8	3.1	3.4
13	235	7.9	225	(3.8)	119	2.8	2.0	3.3
14	240	8.2	235	---	121	2.6	2.4	3.3
15	230	7.8	---	---	122	2.3	3.0	3.4
16	220	6.8			123	1.8	2.7	3.4
17	220	5.9					2.6	3.3
18	225	4.8					2.7	3.2
19	230	4.1					2.8	3.3
20	250	3.4					2.9	3.0
21	300	2.8					2.2	2.8
22	300	3.1					2.1	2.7
23	310	3.1					1.9	2.7

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 49

Djibouti, French Somaliland (11.5°N, 43.1°E) November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		(8.6)					(3.2)	
01		---						
02		(7.7)						
03		(5.8)						
04		4.4						
05		(4.0)						
06		6.1					3.0	
07		8.4					3.7	
08		9.9					4.2	
09		10.0					4.8	
10		10.0					5.7	
11		11.0					5.2	
12		11.4					4.7	
13		12.1					5.2	
14		12.6					5.4	
15		12.7					4.5	
16		12.4					4.1	
17		11.9					3.7	
18		10.6					3.0	
19		9.4					(3.2)	
20		(9.4)					(3.5)	
21		(9.4)					(3.6)	
22		(9.4)					(4.0)	
23		(8.9)					(3.3)	

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes.automatic operation.

Table 50*

Singapore, British Malaya (1.3°N, 103.8°E) November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	6.6						2.9
01	275	5.7						2.9
02	275	5.3						2.9
03	260	4.8						2.9
04	260	4.4						3.0
05	260	3.9						3.1
06	265	5.6						3.1
07	280	7.6	250		120	2.5	3.2	3.0
08	295	8.6	220		120	3.1	3.8	2.8
09	310	8.9	215	4.6	120#	3.2#	4.0	2.4
10	350	9.3	210	4.8			4.1	2.1
11	355	9.6	205	4.9			4.2	2.3
12	350	10.2	200	4.9			4.3	2.2
13	350	10.6	205	4.8			4.2	2.3
14	340	10.6	210	4.7			4.2	2.3
15	320	11.0	215	4.5	120#	3.3#	4.2	2.3
16	310	11.0	235	4.0#	115	2.8	4.0	2.4
17	290	10.8	250		150#	2.4	4.0	2.3
18	295	10.7					3.2	2.4
19	325	10.3						2.5
20	310	10.3						2.6
21	265	10.6						2.8
22	220	10.8						3.2
23	225	8.4						3.1

Time: 105.0°E.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute.
*Average values except foF2 and fEs, which are median values.
#One or two observations only.

Table 51*

Falkland Is. (51.7°S, 57.8°W) November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	7.6						2.5
01	310	7.4						2.6
02	300	7.0						2.6
03	310	6.8						2.6
04	300	7.0	300#	3.2				2.5
05	290	7.4	280	4.0	150	2.3	2.6	2.6
06	300	8.2	260	4.4	140	2.6	3.4	2.6
07	320	8.2	240	4.5	130	2.9	4.2	2.7
08	330	8.6	240	4.7	120	3.1	4.6	2.7
09	330	9.0	240	4.8	120	3.2	5.0	2.7
10	330	9.2	230	4.9	120	3.3	4.6	2.7
11	340	9.2	230	5.0	120	3.4	4.7	2.7
12	330	9.4	230	4.9	120	3.4	4.4	2.8
13	320	9.6	240	4.9	120	3.5	4.3	2.9
14	310	8.8	240	4.7	120	3.3	4.6	3.0
15	310	7.8	240	4.7	120	3.2	4.3	3.0
16	300	7.4	240	4.5	120	3.0	4.2	3.0
17	280	7.8	250	4.1	130	2.6	4.6	3.0
18	270	7.7			150#	2.3	4.2	2.9
19	280	8.0					3.9	2.9
20	290	8.0					3.6	2.7
21	300	7.9					3.1	2.6
22	310	8.0					2.9	2.6
23	310	7.8					2.7	2.5

Time: 60.0°W.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute.
*Average values except foF2 and fEs, which are median values.
#One or two observations only.

Table 52

Reykjavik, Iceland (64.1°N, 21.8°W) October 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	390	(3.8)					4.7	(2.8)
01	(380)	(3.8)					4.6	(2.8)
02	360	(3.5)					4.3	(2.8)
03	340	(3.3)					4.4	(2.9)
04	300	(3.0)					3.6	(3.0)
05	290	(2.8)			---	---	3.0	(3.0)
06	300	(2.8)			---	---	2.1	(3.1)
07	280	3.2			110	1.7		3.1
08	260	4.3			120	2.0		3.3
09	260	5.1	240	---	120	2.3		3.3
10	270	5.6	240	(3.5)	110	2.4		3.2
11	280	6.0	250	(3.6)	110	2.4		3.2
12	280	6.0	230	(3.5)	120	2.5		3.2
13	270	5.8	240	3.5	120	2.6		3.2
14	260	5.9	240	(3.5)	110	2.5		3.2
15	260	5.9	240	3.4	120	2.4		3.2
16	250	5.4	---	---	120	2.2		3.2
17	260	(5.4)			120	1.9		(3.1)
18	300	(4.2)			---	---	3.1	(3.0)
19	310	(3.7)			---	---	4.3	(3.0)
20	340	(3.8)					3.4	(3.0)
21	330	(3.5)					4.1	(3.1)
22	350	(3.8)					5.6	(3.0)
23	350	(3.8)					4.8	(2.8)

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 53

Dakar, French West Africa (14.6°N, 17.4°W) October 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	255	(>12.8)						---
01	240	(>12.8)						(>3.4)
02	225	(>10.0)						(3.6)
03	230	(>7.0)						3.5
04	235	5.6						3.3
05	240	4.6						3.4
06	255	6.1			---	1.6	3.0	3.5
07	240	9.0	240	---	111	2.5	2.5	3.5
08	255	11.2	230	---	104	3.0	3.7	3.4
09	270	12.4	225	---	104	3.4		3.3
10	285	13.4	215	5.1	102	3.6		<3.2
11	295	13.6	210	5.1	101	3.7		3.0
12	295	(13.7)	205	5.2	101	3.8		2.8
13	320	13.4	210	---	101	3.6		2.8
14	(340)	(14.0)	225	---	101	3.5	4.0	2.8
15	(300)	(14.0)	230	---	101	3.2	3.8	2.9
16	(290)	(14.0)	240	---	101	2.8	3.7	(3.0)
17	255	(14.0)	255	---	---	2.2	3.8	2.9
18	280	(13.6)			---	---	3.4	2.8
19	302	(>14.0)					2.8	---
20	255	14.0					2.5	---
21	248	14.0						---
22	265	(>14.0)						---
23	265	(13.0)						---

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 54

Djibouti, French Somaliland (11.5°N, 43.1°E) October 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06		5.7					4.1	
07		7.9					4.5	
08		9.4					4.8	
09		10.0					6.0	
10		10.7					6.3	
11		10.3					6.8	
12		10.3					6.9	
13		11.1					6.7	
14		11.1					6.3	
15		12.0					5.8	
16		12.0					5.0	
17		11.1					4.5	
18		10.7					4.1	
19								
20								
21								
22								
23								

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 55*

Falkland Is. (51.7°S, 57.8°W) October 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	6.2						2.6
01	330	5.9						2.5
02	310	5.8						2.6
03	310	5.5						2.7
04	310	5.4						2.7
05	270	5.9	250#	4.0#				2.8
06	240	6.7	240#	3.3#	140	2.3		3.1
07	260	7.2	240	4.2	130	2.6	3.0	3.1
08	260	7.8	240	4.4	120	2.9	4.2	3.0
09	290	9.0	230	4.7	120	3.1	4.7	2.9
10	280	9.8	230	4.8	120	3.2	4.8	3.0
11	290	9.8	230	4.9	120	3.3	4.6	3.0
12	290	10.0	230	4.8	110	3.3	4.6	3.0
13	280	9.7	230	4.7	120	3.2	4.3	3.1
14	270	8.8	230	4.5	110	3.1	3.8	3.1
15	260	8.4	230	4.3	120	3.0	3.2	3.2
16	260	8.2	250	4.1	130	2.7	2.6	3.2
17	250	8.0			140	2.3		3.1
18	250	8.1						3.1
19	260	7.9					2.7	3.0
20	280	7.6					2.8	2.8
21	280	7.0						2.7
22	300	6.6						2.6
23	310	6.2						2.6

Time: 60.0°W.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute.
*Average values except foF2 and fEs, which are median values.
#One or two observations only.

Table 56

Reykjavik, Iceland (64.1°N, 21.8°W) September 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(380)	(3.9)					4.7	(2.7)
01	---	---					4.6	---
02	340	(4.2)					4.7	(2.7)
03	---	(3.8)					5.0	(2.9)
04	(330)	(3.3)			---	---	4.6	(3.0)
05	300	3.4			120	---	4.2	3.0
06	280	3.9	---	---	110	2.1	3.0	3.1
07	260	4.6	---	---	110	2.2		3.2
08	290	5.2	220	---	110	2.6		3.2
09	310	5.1	230	4.0	110	---		3.2
10	320	5.4	230	4.2	110	---		3.1
11	310	5.6	230	4.0	100	3.0		3.1
12	360	5.4	240	4.2	110	3.1		2.8
13	320	5.5	230	4.0	120	3.1		3.1
14	310	5.4	230	4.0	110	---		3.0
15	330	5.2	240	3.8	120	2.9		3.1
16	310	5.0	240	3.8	120	2.6		3.0
17	300	4.9	230	---	130	2.5	3.0	3.0
18	320	4.6	---	---	120	2.2	3.2	3.0
19	300	4.2			---	---	3.7	3.0
20	340	(4.0)					4.4	(2.9)
21	340	(4.0)					5.3	(2.9)
22	360	(4.1)					4.9	(2.8)
23	360	(4.0)					4.4	(2.8)

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 57

Dakar, French West Africa (14.6°N, 17.4°W) August 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	350	4.6						2.4
01	340	4.3					1.7	2.5
02	310	4.1						2.6
03	295	4.2						2.7
04	280	4.0					1.9	2.8
05	270	3.8					2.6	3.0
06	245	5.6			---	1.7	3.4	3.2
07	240	6.5	230	---	111	2.6	3.9	3.2
08	270	7.3	220	4.3	109	3.1	4.6	3.0
09	310	7.6	220	4.8	105	3.5	4.5	2.7
10	340	8.6	220	5.1	105	3.8	5.9	2.6
11	360	10.2	215	5.3	103	3.9	5.9	2.6
12	375	11.2	210	5.3	103	4.0	5.0	2.6
13	365	11.8	210	5.3	103	3.9	4.4	2.6
14	365	12.6	220	5.2	105	3.7	4.4	2.6
15	345	12.9	225	5.0	105	3.5	4.8	2.5
16	330	13.3	240	4.8	103	3.1	4.0	2.6
17	300	(>14.0)	245	---	107	2.6	3.8	2.6
18	260	13.0	255	---	---	2.0	3.8	2.8
19	265	10.4					3.6	2.8
20	300	8.0					3.0	2.6
21	330	6.2					2.6	2.5
22	350	5.5					2.8	2.4
23	355	5.2						2.4

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 58

Dakar, French West Africa (14.6°N, 17.4°W) July 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	4.2					3.7	(2.5)
01	320	4.0					3.4	(2.6)
02	315	3.7					2.8	(2.6)
03	330	3.6					2.7	(2.6)
04	310	3.5					3.6	(2.6)
05	270	3.8					3.6	(2.9)
06	250	5.6	---	---	(143)	1.9	3.7	3.0
07	252	6.7	235	---	112	2.5	4.3	3.2
08	290	6.7	230	---	109	(3.1)	6.2	3.0
09	328	7.4	222	(5.1)	109	3.5	5.8	2.8
10	370	8.2	220	(5.1)	107	3.7	6.0	2.6
11	430	9.3	220	(5.2)	105	3.8	5.8	2.5
12	452	10.4	215	5.1	105	(3.9)	6.3	2.5
13	440	11.3	220	5.1	105	3.8	5.5	2.5
14	400	12.0	225	5.0	107	3.7	5.0	2.6
15	360	12.0	235	5.0	109	3.5	4.8	2.6
16	330	12.2	230	(4.8)	109	3.2	4.9	2.7
17	318	12.0	235	---	113	2.7	4.1	2.7
18	262	11.6	255	---	119	(2.0)	3.7	2.7
19	270	9.8					4.0	(2.8)
20	305	6.6					3.2	(2.6)
21	358	5.8					2.8	2.4
22	(355)	5.0					2.4	2.4
23	(350)	4.8					2.8	2.4

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 59

San Francisco, California (37.4°N, 122.2°W) December 1942

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	6.4			110	2.2	3.1	3.4
01	220	4.8					3.3	3.4
02	240	3.3					3.0	3.2
03	240	2.9					2.9	3.2
04	240	3.0					3.2	3.2
05	240	2.8					3.0	3.2
06	260	2.9					3.2	3.0
07	260	3.0					3.2	3.0
08	260	3.2					3.2	3.0
09	260	3.3					3.2	3.0
10	260	3.2					2.9	3.0
11	250	3.2					3.1	3.0
12	260	3.4					2.9	3.0
13	260	3.2					2.9	3.0
14	270	3.2					2.8	3.0
15	240	3.8			---	---	2.7	3.2
16	220	5.8	220	2.5	120	2.0	3.0	>3.3
17	220	6.5	220	3.4	115	2.4	3.2	3.4
18	230	6.6	220	3.8	110	2.7	3.6	3.4
19	240	7.3	220	4.0	110	2.9	3.5	3.2
20	240	7.6	220	4.0	110	3.0	3.4	>3.1
21	240	7.6	220	3.9	110	3.0	3.3	3.2
22	240	7.2	220	3.6	110	2.8	3.2	3.2
23	230	6.5	220	3.4	110	2.5	3.2	3.4

Time: 0.0°.

Table 60

San Francisco, California (37.4°N, 122.2°W) November 1942

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	6.8					3.2	3.4
01	210	5.6					3.2	3.4
02	220	3.4					3.2	3.2
03	230	3.2					2.8	3.2
04	240	2.8					2.7	3.2
05	250	2.8					3.2	3.0
06	250	3.0					3.2	3.0
07	260	3.2					3.2	3.0
08	250	3.3					3.2	3.0
09	250	3.3					3.2	3.0
10	260	3.3					3.1	3.0
11	250	3.4					2.8	3.0
12	250	3.3					3.0	3.0
13	250	3.3					2.9	3.0
14	240	3.2					2.8	3.0
15	230	5.0			120	1.6	3.0	3.2
16	230	6.8	220	3.2	115	2.3	3.2	3.4
17	240	7.0	220	3.5	110	2.6	3.2	3.4
18	240	7.9	220	4.0	110	2.8	3.3	3.2
19	260	8.7	220	4.1	110	3.0	3.2	---
20	250	8.8	220	4.1	110	3.0	3.2	---
21	250	8.2	230	4.1	110	3.0	3.2	---
22	250	8.0	220	3.9	110	2.8	3.2	---
23	240	7.4	230	3.4	110	2.6	3.2	3.2

Time: 0.0°.

Table 61

San Francisco, California (37.4°N, 122.2°W) October 1942

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	7.1	230	3.4	120	2.4	3.0	3.2
01	230	6.1	240	2.7	---	2.1	2.7	3.4
02	220	4.4					3.1	3.2
03	240	3.3					2.7	3.2
04	260	3.0					2.8	3.2
05	300	2.9					2.8	3.0
06	280	3.1					3.2	3.0
07	280	3.2					2.8	3.0
08	290	3.2					3.2	3.0
09	280	3.2					2.6	3.0
10	280	3.2					2.4	3.0
11	280	3.2					2.6	3.0
12	270	3.2					2.6	3.0
13	270	3.2					2.4	3.0
14	260	3.4					2.4	3.0
15	250	5.5	240	3.1	---	2.1	2.2	3.2
16	250	6.4	[illegible]	3.6	120	2.5	3.2	3.2
17	260	6.5	[illegible]	4.0	120	2.8	3.2	3.2
18	290	[illegible]	[illegible]	4.2	120	3.0	3.2	3.0
19	280	7.3	200	4.4	115	3.1		3.0
20	270	8.0	210	4.3	115	3.2		>3.0
21	280	8.0	220	4.3	120	3.1		>3.0
22	280	7.6	230	4.2	120	3.0		3.0
23	260	[illegible]	230	4.0	120	2.8		3.2

Time: 0.0°.

Table 62

San Francisco, California (37.4°N, 122.2°W) September 1942

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	6.4	230	3.8	120	2.6	3.2	3.0
01	250	6.0	230	3.2	120	2.2	3.2	3.2
02	230	5.5	---	---	---	---	2.8	3.2
03	240	4.2	---	---			2.8	3.0
04	250	3.3					3.0	3.0
05	260	3.2					3.0	2.8
06	280	3.2					2.6	2.8
07	280	3.2					2.4	2.8
08	260	3.1					2.6	2.8
09	270	3.2					2.3	2.8
10	260	3.2					2.5	2.8
11	280	3.1					2.4	2.8
12	260	3.2					2.5	3.0
13	270	3.0			---	---	2.7	3.0
14	260	4.0	---	---	---	---	2.6	3.0
15	290	4.6	230	3.5	115	2.2	3.4	3.0
16	310	5.6	220	3.9	120	2.6	3.4	3.0
17	300	6.2	210	4.0	115	2.9	3.2	3.0
18	320	6.2	210	4.2	115	3.1	3.3	2.8
19	320	6.4	200	4.3	115	3.2	3.2	2.8
20	310	7.2	200	4.3	115	3.2		2.8
21	300	7.4	220	4.3	115	3.2		3.0
22	290	7.2	220	4.2	110	3.1		>3.0
23	280	6.4	220	4.0	115	3.0	3.2	3.0

Time: 0.0°.

Table 63

San Francisco, California (37.4°N, 122.2°W) May 1942

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	6.2	230	3.3	120	2.7	3.0	3.0
01	300	5.9	230	3.2	120	2.4	3.0	3.0
02	280	6.0	240	2.8	---	(2.2)	3.0	3.2
03	250	6.3					3.0	3.2
04	240	5.9					3.0	3.2
05	260	5.4					2.9	3.0
06	290	3.6					3.2	3.0
07	320	3.3					2.8	3.0
08	320	3.3					2.3	2.8
09	320	3.3					2.8	2.8
10	320	3.3					2.6	2.8
11	320	3.2					2.5	2.8
12	310	3.1					2.7	3.0
13	310	3.1					2.6	3.0
14	320	3.6	240	2.9	(130)	(2.2)	2.8	3.0
15	340	5.3	240	3.2	120	2.4	2.8	3.0
16	370	5.7	240	3.3	120	2.6	3.2	2.8
17	350	6.0	220	3.4	120	2.8	5.2	2.8
18	370	6.0	220	3.5	115	2.9	5.3	2.8
19	350	6.2	210	3.4	115	2.8	5.3	3.0
20	350	6.3	220	3.5	115	2.9	5.3	2.8
21	350	6.5	(220)	3.5	115	2.9	5.3	2.8
22	340	6.5	(220)	3.4	115	2.9		3.0
23	320	6.5	235	3.4	120	2.8	3.0	3.0

Time: 0.0°.

Table 64

San Francisco, California (37.4°N, 122.2°W) April 1942

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	7.1	225	---	110	2.8		
01	240	7.1	235	---	115	2.5	2.8	
02	235	7.1	---	---	---	---	2.8	
03	220	6.9					2.4	
04	245	6.2					2.4	
05	260	4.6					2.4	
06	270	4.1						
07	270	4.0						
08	295	3.7						
09	305	3.6						
10	310	3.6						
11	300	3.5						
12	290	3.4						
13	290	3.4						
14	250	5.0	---	---	---	2.0	2.3	
15	240	5.9	220	3.1	120	2.4	2.8	
16	270	6.4	220	---	115	2.6	3.0	
17	290	6.9	---	---	115	2.9		
18	300	6.8	---	---	115	3.1		
19	320	7.1	---	---	110	3.2		
20	310	7.4	---	---	110	3.3		
21	325	7.6	---	---	100	3.1		
22	280	7.3	---	---	110	3.3		
23	260	7.1	---	---	105	3.0		

Time: 0.0°.

Table 65

San Francisco, California (37.4°N, 122.2°W) March 1942

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(260)	---	250	4.5	130	2.8		
01	270	---			140	2.4		
02	260	---			---	---		
03	250	(5.0)						
04	270	4.8					2.5	
05	300	4.6						
06	320	4.0						
07	320	4.0						
08	340	4.1						
09	350	3.8						
10	350	3.6						
11	350	3.6						
12	350	3.5						
13	350	3.3						
14	320	3.5			---	---		
15	280	---	---	---	---	2.3		
16	---	---	270	---	130	2.6		
17	---	---	250	---	130	3.1		
18			240	---	130	3.3		
19			240	---	130	3.3		
20			250	---	130	3.4		
21			240	---	120	3.4		
22			240	---	130	3.4		
23			250	---	120	3.1		

Time: 0.0°.

Table 66

San Francisco, California (37.4°N, 122.2°W) February 1942

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(260)	---	---	---	120	2.6		
01	250	---	---	---	---	2.3		
02	240	---	---	---			2.4	
03	260	3.2						
04	(300)	3.2						
05	300	3.0						
06	330	3.0						
07	330	3.2						
08	330	3.2						
09	310	3.2						
10	340	3.1						
11	330	3.2						
12	330	3.2						
13	350	3.2						
14	340	3.1						
15	280	---			---	---		
16	260	---			120	2.4		
17	250	---	---	---	120	2.8		
18	250	---	---	---	120	3.1		
19	---	---	---	---	120	3.2		
20	---	---	---	---	120	3.3		
21	---	---	---	---	110	3.2		
22	(250)	---	---	---	120	3.2		
23	(260)	---	---	---	120	3.0		

Time: 0.0°.

Form adopted June 1946

TABLE 67

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

h'F2 (Characteristic), Km (Unit), April (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., A.C.K.

Calculated by: E.J.W., A.C.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	300K	(300)SK	(330)SK	(350)SK	EK	EK	270K	GK	GK	GK	GK	GK	(570)SK	450K	420K	390K	350K	(300)LK	280K	[260]CK	260K	(300)SK	300SK	(300)SK
2	(300)SK	(280)SK	280KS	250K	EK	EK	300K	LK	LK	290K	[300]LK	300HK	300K	340K	320K	290K	310K	250K	260K	250HK	250HK	300K	(300)SK	300SK
3	(300)SK	(300)SK	(320)SK	(370)SK	(330)SK	(320)SK	300K	260K	450K	GK	500	500F	350	370	360H	330H	370H	370	320	250	270	(290)S	(310)S	(330)S
4	(310)S	(320)S	(340)SK	EK	EK	EK	300K	GK	GK	GK	GK	GK	GK	360HK	450HK	400K	380K	320K	280K	250K	230K	(260)SK	(350)SK	(360)SK
5	(370)SK	(330)SK	280K	390K	SK	SK	270K	230K	GK	GK	GK	GK	GK	GK	470HK	410K	380K	310K	300K	250K	(270)SK	(290)SK	SK	SK
6	SK	SK	EK	EK	EK	(380)SK	280K	GK	GK	GK	GK	GK	GK	GK	560K	430K	400K	350K	280K	250K	250	270S	(270)S	(280)S
7	(250)S	(270)S	310S	370S	350	(350)S	270	L	L	400	440H	420	400H	350	320	310	350	300	260	250	230	290	320	(270)S
8	(310)SK	(300)SK	SK	SK	SK	FK	260K	LK	GK	GK	GK	GK	GK	540K	580K	470K	470K	340K	(300)LK	250K	240K	230K	(320)SK	SK
9	SK	SK	SK	EK	EK	SK	270K	LK	GK	GK	550K	560HK	520K	540K	380K	350K	330K	330K	280K	250K	250	260	320S	320S
10	300	300S	320	(310)S	(300)S	(320)S	270	[320]L	380	410H	380	420	380	340H	340	320	340	300	260	230	220	230S	270S	300S
11	(280)S	290S	290S	300S	(360)S	(370)S	250	310	330H	[380]L	430	370	320	350	340	330	310	240	270	230	(220)S	240	280	290S
12	290S	(290)S	280S	270S	290S	300	260	(280)L	320	370H	380H	410H	360	M	M	M	M	M	M	230	230	250	280	280
13	(300)S	300	(280)S	230	270	270	260H	320	320H	370	330H	300	310	330	310	320	290	280	250	220	230	230	260	270
14	290	270	260	250	250	(280)S	260	290	300H	[320]M	360	360	390	350	300	310	300	290	270	230	240	(260)S	290	(280)S
15	(270)S	(270)S	(270)S	260	270	(280)S	240	(320)L	300	370	350	370H	320H	320	310	290	280	280	270	[260]A	250	250	(250)S	(280)S
16	(280)S	280	300	(300)S	(300)S	290	250	(360)L	400	500	520	500	450	410	360	390	350	320	280	240	230	240	290	300
17	(310)S	(310)S	(300)S	280	(280)S	(300)S	270	360	350H	400H	370H	350H	370H	350	330	320	300	270	260	230	220	240	270	300
18	290	(300)S	300	300	270	(260)S	260	280H	270	320H	350H	330	360	330	320	330	320	290	260	230	220	220	(280)S	(300)S
19	(280)S	(280)S	240	(270)S	(260)S	(270)S	(320)L	[410]L	500K	GK	GK	GK	550K	610K	GK	460K	450K	420K	330K	260K	230K	230K	SK	EK
20	EK	EK	EK	EK	280	270	[320]L	360	500	360	(350)L	330	380	340	320	310	320	290	260	230	220	230	(260)S	270
21	270	260	270	270	270	[260]S	250	300	340	350	340HK	640K	470K	480K	550HK	580K	400K	400K	290HK	250K	240K	230K	SK	EK
22	EK	EK	SK	(310)SK	(370)SK	(390)SK	280K	270K	GK	GK	GK	GK	GK	GK	GK	GK	590K	430K	320K	270K	240SK	(260)SK	300SK	320K
23	300K	(310)SK	(350)SK	EK	EK	(240)SK	260K	GK	370	380	310	350	360	340	350	320	290	290	260	(240)A	240	240	300SK	260
24	270	290	300	270	250	270	240	270	290H	270	300	310H	360	360	310	300	290	310	280	230	230	220	240	270
25	270	270	270	270	(270)A	260	270	290	310	310	330H	300	330	330	330	310	290	280	270	240	240	230	250	270
26	270	270	270	270	270	270	250	320H	330H	280H	340	340	400H	370	340	330	320	310	270	260	240	230	240	270
27	290	290	C	C	C	C	C	C	C	C	C	C	320	300	320	300	290	280	270	250	230	230	250	240
28	300	300	300	270	250	280	260	320	(360)L	370	460H	490	410H	410H	370H	430	390	400	340	210	240	250	270	260
29	300	350	310	(370)S	350	320	(300)L	(320)L	G	400	420	400	400	340	380H	340	370	270	310	250	210	(320)A	300	(300)A
30	(330)A	(320)SK	350K	(370)SK	EK	(310)SK	260K	GK	GK	GK	GK	GK	GK	GK	GK	640K	450K	370K	310K	260K	250K	300K	320K	(320)AK
31																								
Median	300	(300)	300	300	(300)	(300)	270	320	380	400	420	420	400	360	350	330	340	300	280	250	240	240	280	240
Count	27	27	25	27	27	27	29	25	27	29	29	29	30	29	29	29	29	29	29	30	30	30	27	27

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 68

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), April (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., A.C.K.

Calculated by: E.J.W., A.C.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	K2.5 SF	2.1 K	1.8 SK	(1.6) SK	<1.0 EK	<1.0 EK	2.6 K	<3.4 GK	<3.6 GK	<3.8 GK	<4.0 GK	<4.0 GK	(4.4) SK	4.7 K	4.7 K	4.9 K	4.8 K	4.6 K	4.8 K	[4.7] CK	4.5 SK	(4.0) SK	(4.4) SK	3.9 SK
2	3.9 SK	3.7 SK	3.3 FK	2.4 SK	<1.0 EK	<1.0 EK	2.7 K	K3.8 SJ	4.6 K	6.0 SK	5.6 K	7.0 HK	6.7 K	7.0 K	8.0 K	8.6 K	8.6 K	9.0 K	8.6 K	K6.6 HS	K5.2 HF	K3.8 SF	K(3.7) FS	K(3.2) SF
3	K(3.2) SF	3.0 FK	K(1.4) FJ	K(2.0) KS	(2.2) FK	1.9 FK	2.8 FK	3.1 K	3.9 SK	<3.8 GK	4.6	5.0 F	5.8	5.8	5.8 H	5.2 H	5.3 H	5.1	5.2	5.2	4.3 S	(3.5) S	2.9 S	(2.7) F
4	(2.4) SF	(2.2) SF	K[2.1] SF	<1.0 EK	<1.0 EK	<1.0 EK	2.5 K	<3.2 GK	<3.5 GK	<3.8 GK	<4.0 GK	<4.0 GK	<4.0 GK	4.7 HK	4.7 HK	5.0 K	5.2 K	5.4 K	5.3 SK	5.0 K	4.7 SK	2.7 SK	K2.0 FS	2.0 FK
5	2.1 FK	2.2 FK	2.2 FK	K1.5 JS	S FK	S FK	2.8 K	3.3 K	<3.6 GK	<3.8 GK	<3.9 GK	<4.0 GK	<4.1 GK	<4.0 GK	4.6 HK	4.7 K	5.0 K	4.9 K	4.2 K	4.3 SK	3.0 K	K2.5 SF	1.9 SK	1.8 FK
6	1.7 K	K1.7 JS	<1.0 EK	<1.0 EK	<1.0 EK	(1.8) FK	2.7 K	<3.4 GK	<3.7 GK	<3.8 GK	<4.0 GK	<4.0 GK	<4.0 GK	<4.1 GK	4.3 K	4.6 K	4.7 K	4.8 K	5.4 SK	6.3 SK	5.2 S	3.6 S	3.2 F	3.2 S
7	3.0 F	2.5 F	2.0 F	1.9 S	1.8 F	1.9 F	3.0	3.8 S	4.2	4.4	(4.8) SH	5.1	5.4 H	5.8	6.0	5.6	5.3	5.3	5.4	4.7 JS	(4.3) S	3.0 SF	2.7 F	2.6 F
8	2.4 FK	K(1.7) JF	F K	F K	K(1.7) FJ	<1.0 EK	2.9 K	K3.7 JS	<3.8 GK	<3.9 GK	<4.0 GK	<4.1 GK	<4.2 GK	4.4 K	4.3 K	4.5 K	4.6 K	5.0 K	4.5 K	5.2 K	K4.5 SF	(3.5) SK	K(2.0) JS	(1.9) SK
9	K(1.9) JS	K(1.7) JF	F K	<1.0 EK	<1.0 EK	F K	3.0 K	3.6 SK	<3.7 GK	<3.9 GK	4.3 K	4.3 HK	4.6 K	4.7 FK	5.2 K	5.4 K	5.1 K	5.0 K	5.1 K	5.2	5.0	4.0	3.4	3.4
10	3.4	2.9 F	2.5 F	2.4 S	2.3 FJ	(2.1) F	3.1	3.9 S	4.3	4.7 H	5.2	5.1	5.4	5.7 H	5.6	5.5	5.4	5.7	6.0	6.3	5.3	3.8	3.1	3.0 F
11	2.7 F	2.5 F	2.3 F	2.1 F	(1.8) F	(1.8) F	3.4	4.2	4.9 H	4.7 H	5.0	5.4	5.6	5.5	5.9	5.8	5.8	5.8	6.0	5.9	5.2 S	3.9	3.4	3.0
12	2.9	2.8 F	2.4 F	2.3 F	2.0 F	(2.0) F	3.3	4.0 H	4.6	4.7 H	4.9 H	5.1 H	5.5	M	M	M	M	M	M	5.5	5.6	4.1	(3.9) S	3.5
13	(3.4) S	3.2	3.1	3.0	2.0	2.1	3.7 H	4.5	4.7 H	5.0	5.6 H	6.1	5.9	5.8	6.0	6.2	6.4	6.6	6.5	5.9	5.2	(4.0) FS	(3.6) SF	3.3 F
14	3.1 F	(3.0) F	2.8 F	(2.4) SF	(2.0) F	1.8 F	3.6	4.8	5.0 H	[5.0] M	5.3	5.4	6.2	6.6	7.0	6.5	6.4	5.8	6.3	5.6	4.8	4.1	(3.7) S	(3.5) S
15	3.3	3.1	3.0	2.9 S	2.4 F	2.3	4.0	4.4	5.0	5.2	5.5	5.9 H	6.0 H	6.6	6.3	6.4	6.4	5.8	6.4	6.4	5.5	5.0	(4.1) S	(3.5) F
16	(3.5) SF	3.6	3.1	3.0	2.5	2.5	3.2	3.9	4.4	4.5	4.5	4.7	5.0	5.0	5.2	4.8	5.0	5.1	5.4	5.3	4.6	3.5	3.0	2.8
17	2.7	2.4	2.5 F	2.4	2.2	2.1	3.3	3.9	4.3 H	4.4 H	4.8 H	5.4 H	5.2 H	5.7	6.0	6.0	5.9	6.0	6.0	5.7	4.8	3.3	2.8	2.6
18	2.6	2.3 F	2.2	2.2	2.2	2.5	3.8	4.5 H	5.3	5.5 H	5.6 H	5.2	5.6	6.0	5.9	6.2	6.2	6.4	7.2	(7.2) S	5.6	4.0	3.4	3.0
19	3.0 F	2.8 F	2.4 JS	1.9 F	1.8 F	1.9	3.2	(3.8) S	K4.0 JS	<3.9 GK	<4.0 GK	<4.0 GK	4.2 K	4.3 K	<4.1 GK	4.4 K	4.3 K	4.5 K	4.5 K	4.6 K	4.7 K	3.1 K	1.8 K	K1.5 JS
20	K1.5 JS	K1.7 JS	1.9 K	1.8 K	1.8	2.0	3.5	3.9	4.2	5.0	4.8	5.4	5.2	5.5	5.8	5.6	5.4	5.4	5.8	6.0	5.7	4.5	3.8	3.5
21	3.5	3.1	2.9	2.8	2.5	2.4	3.7	4.7	5.3	5.6	6.0 HK	5.0 K	5.3 K	5.0 K	(5.0) HK	4.3 K	4.8 K	4.8 K	(5.0) HK	5.4 K	5.0 K	3.8 K	K1.8 JS	<1.0 EK
22	<1.0 EK	<1.0 EK	F S	(1.8) FK	K[1.8] FS	(1.9) FK	2.7 K	3.2 K	<3.5 GK	<3.7 GK	<3.8 GK	<4.0 GK	<4.0 GK	<4.0 GK	<4.0 GK	<3.8 GK	4.0 K	4.1 K	4.2 K	4.3 K	4.3 KS	3.2 K	2.7 FK	2.5 FK
23	1.9 FH	[1.9] FK	(1.4) FK	<1.0 EK	<1.0 EK	K(1.7) PS	3.0 K	<3.3 GK	4.6	5.3	5.7	5.8	5.7	5.8	6.0	6.2	6.1	5.7	5.6	5.6	5.4	4.7	4.1	3.5
24	3.0	2.4 F	(2.2) F	(1.9) FS	1.7 F	2.5	4.3	5.1	5.6 H	6.0	6.4	6.0 H	6.6	6.9	7.9	7.5	7.0	6.4	7.8	7.8	6.6	5.0	4.4	4.0
25	3.4	3.0 F	2.7 F	2.5 F	2.2 F	2.6	4.4	4.8	5.4	5.4	5.8 H	5.7	5.6	5.9	6.4	6.4	6.3	6.2	6.3	6.6	6.3	5.0	4.2	3.5
26	3.2	3.0	2.7	2.5	2.3	2.5	3.6	4.2 H	5.1 H	5.3 H	5.2	5.6	5.4 H	5.6	6.3	6.2	6.4	6.0	5.7	5.6	5.7	5.0	3.6 F	2.7 F
27	2.7 F	2.8 F	C	C	C	C	C	C	C	C	C	C	6.0	6.0	6.0	6.0	6.0	6.2	6.4	6.8	6.6	5.4	4.7	4.0
28	3.3	3.1 F	3.2	3.0 F	3.1	2.8	3.8	4.6	4.8 H	5.0	5.0 H	5.2	5.6 H	5.7 H	5.5 H	4.9	4.7	4.5	4.8	5.2	6.0	4.9	4.3	3.7
29	3.1	(2.7) S	(2.1) SF	(1.5) S	(1.7) SF	2.4 F	3.4	3.6	<3.8 G	4.5	5.0	5.1	5.6	6.4	6.5 H	6.2	6.2	6.2	6.1	6.2	5.2	3.7	3.2	2.9
30	(2.6) F	(2.5) PK	(1.7) FK	K(1.4) SF	<1.0 EK	2.2 FK	3.0 K	<3.5 GK	<3.6 GK	<3.9 GK	<4.0 GK	<4.0 GK	<4.1 GK	<4.1 GK	<4.0 GK	4.1 K	4.3 K	4.5 K	4.7 K	4.5 K	3.8 K	3.4 K	3.2 K	(2.7) FK
31																								
Median	3.0	2.6	2.4	2.0	1.8	2.0	3.2	3.9	4.3	4.7	4.9	5.1	5.4	5.7	5.8	5.6	5.4	5.4	5.6	5.6	5.1	3.8	3.4	3.0
Count	30	30	26	28	28	27	29	29	29	29	29	29	30	29	29	29	29	29	29	30	30	30	30	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 69

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), April (Month), 1952

Observed at Washington, D.C.

Lat. 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., ACK

Calculated by: E.JW., ACK

Day	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330
1	(2.5)FK	2.0SK	(1.7)SK	<1.0EK	<1.0EK	(1.8)SK	3.1K	<3.6GK	<3.6GK	<3.9GK	<4.0GK	<4.0GK	4.7K	4.7K	4.5K	5.0K	4.7K	4.7K	[4.8]CK	C K	[4.2]CK	4.0SK	(4.3)SK	3.9SK
2	(3.8)SK	3.5K	3.0FK	1.7K	<1.0EK	2.2K	3.4K	4.4K	5.3K	6.0FK	6.5K	6.9K	6.4K	7.8K	8.0K	8.5K	9.2K	8.4K	7.3SK	6.2K	3.8FK	3.8FK	3.6FK	3.0FK
3	3.2K	(2.3)FK	[1.7]FK	2.5K	2.7FK	2.1FK	3.1K	3.4HK	<3.8GK	<4.0GK	4.9	5.4	5.4	5.8H	5.6F	5.0H	5.4	6.4	5.6	5.1S	3.8S	(3.1)SF	2.8F	2.5F
4	(2.3)FS	(2.1)F	(2.1)FK	<1.0EK	<1.0EK	(1.9)SK	3.0K	<3.4GK	<3.7GK	<3.8GK	<4.0GK	(4.3)SK	4.3FK	4.6H	4.8F	5.0K	5.3K	5.2K	5.1SK	5.2K	4.0K	2.2FK	2.0FK	2.0FK
5	2.1FK	2.3FK	2.0SK	SFK	SFK	SFK	3.1K	3.4HK	<3.8GK	<3.9GK	K(4.0)SG	4.2K	K<4.1SG	4.5K	4.6K	4.6K	5.1K	4.5SK	4.5SK	4.0SK	2.7SK	(1.9)FK	1.8SK	K1.8SJ
6	K1.7JS	K1.6JS	<1.0EK	<1.0EK	(1.8)SK	2.1FK	3.1K	(3.8)SK	K(3.8)SG	<4.0GK	<4.0GK	<4.0GK	<4.1GK	<4.1GK	4.5K	4.6SK	4.9K	5.2K	6.1SK	5.7K	3.8S	3.5	3.2S	3.1S
7	2.9F	2.2F	2.0SF	2.0F	1.9S	2.4F	3.4	4.2	4.4	4.7	(4.7)H	5.2	5.8	6.1	5.9	5.4	5.4	5.3	5.1S	4.8	3.5JS	2.8F	2.8	2.4F
8	2.6FK	(1.7)FK	F K	F K	<1.0EK	K2.2JF	3.3K	3.7SK	<3.8GK	<4.0GK	<4.0GK	<4.2GK	4.4K	4.4K	4.4K	4.4K	4.6K	4.8K	4.9K	5.0K	(3.9)SK	2.3K	(2.0)SK	(1.9)SK
9	K(1.7)JS	F K	<1.0EK	<1.0EK	<1.0EK	2.2K	3.4K	<3.6GK	<3.9GK	<4.0GK	4.3K	K4.5SH	4.6K	5.3K	5.3K	5.2K	5.0K	5.0K	5.1K	5.3	4.4	3.5	3.4S	3.3
10	3.2JS	(2.7)S	2.6S	2.4S	2.3F	2.4F	3.6	4.2H	4.6	5.1	5.3	5.4	5.5H	5.5	5.4	5.3	5.6	5.8	6.2	6.1	4.8S	3.5S	3.0F	3.0F
11	2.7F	2.4F	2.4F	(2.0)F	(1.7)F	2.4F	4.0H	4.6	5.0	4.9	5.3	5.7	5.4	5.6	6.0	5.8	5.7	5.8	6.2	5.7	[4.5]C	3.6	3.2S	3.0
12	2.8F	2.6F	2.5F	(2.2)F	1.9F	2.5	(3.8)S	4.3H	4.5H	4.8H	5.0H	5.2H	5.4	M	M	M	M	M	M	5.4	4.6	(3.9)S	(3.7)S	3.4
13	3.2	3.1	(3.0)S	2.4	1.9	2.8	3.9	4.8H	5.0H	5.7	5.4	5.7	5.7	6.0	5.8	6.4F	6.4	6.6	6.2	5.5	4.8F	(3.8)S	(3.5)S	3.2F
14	(3.0)F	2.9F	(2.5)SF	(2.2)F	(1.8)S	2.8	4.4	5.0H	5.0	4.7	5.6H	5.5	6.6H	7.0	6.5	6.6	5.9	5.9	6.2	5.3	4.4	3.8	3.5	3.5F
15	3.2	3.0F	2.9	2.8F	2.3F	3.0	4.2	4.8	5.0	5.3	5.4F	6.2H	6.1	6.6	6.4	6.4	5.8	6.1	6.7	6.0	5.3	4.5	(3.8)S	(3.5)SF
16	3.7	3.3	3.0	2.8	2.5	2.8	3.4	4.2	4.7	4.5	(4.5)S	5.0	4.9	5.0	5.0	4.7	4.9	5.2	5.4	5.0	4.1	3.2	2.8	2.6
17	2.5	2.5	2.4	2.3F	2.1	2.7	3.6	(4.2)H	4.3H	4.6	5.0H	5.4	5.4	6.0	6.2	6.1	6.0	5.6	6.0	5.3	4.1	3.0	2.7	2.4F
18	2.6F	2.3	2.2	2.2	2.2	3.1	4.2	4.8	5.4	5.4	5.5H	5.4	5.8	6.0	5.8	6.2	6.4	5.6	7.3	6.4	4.7	3.6	3.1	3.0
19	2.9	2.5	(2.3)S	1.8F	1.7F	2.7	3.5	3.9	4.2K	<4.0GK	<4.0GK	<4.0GK	4.3K	4.4F	4.2K	4.5K	4.3F	4.3K	4.4K	4.8K	4.1K	2.4K	1.7K	[1.5]SK
20	K1.5JS	K1.8JS	1.9K	1.8K	1.6JS	2.9	3.7	4.1	4.8	5.2	5.6	5.3	5.4	5.6	6.0	5.6	5.6	5.7	6.4	6.4	5.2	4.2	3.5	3.5
21	3.2	3.0	2.8	2.7	2.0	3.1	4.3	4.8	5.9	5.6	6.6HK	5.5K	(5.0)HK	5.2K	4.5HK	4.9K	4.5K	4.9K	6.0K	5.0K	4.7K	2.0K	<1.0EK	<1.0EK
22	<1.0EK	F K	(2.0)FK	1.7FK	[2.0]FK	2.4K	3.0K	<3.3GK	<3.6GK	K<3.8GH	<4.0GK	<4.0GK	<4.1GK	<4.0GK	<3.9GK	<3.8GK	4.0K	4.2K	4.3K	4.6K	3.7K	3.0K	2.5FK	2.2FK
23	1.7FK	K(1.6)FJ	FK(1.4)SP	<1.0EK	<1.0EK	2.6K	3.2K	K(3.9)JS	5.3	5.6	5.7H	5.7	5.6	6.0	6.1	6.1	6.0	5.8	5.5	5.6	5.3	4.3	3.7	3.2
24	2.8F	2.3F	(2.0)F	1.8F	1.6F	3.5H	4.7	5.3	5.9	6.4	6.4	6.2	6.8	7.3	7.9	7.5	6.6	7.1	8.0	7.1	6.0	4.7	4.0	3.7
25	3.2F	2.7F	2.7F	2.4F	2.2	3.5	4.8	4.8	5.2	5.8	5.8	5.7	5.6H	6.0	6.6	6.4	6.2	6.2	6.4	6.5	5.6	4.7	3.8	3.3
26	3.0	2.9	2.7	2.4F	2.1F	3.3	3.9	4.6	5.2	5.1H	5.3H	5.5H	5.6	5.5	6.3	6.4	5.9	6.0	5.4	5.8	5.4	4.2	3.1F	2.6F
27	2.8F	C	C	C	C	C	C	C	C	C	C	C	6.0	6.1	6.0	6.0	6.1	6.2	6.6	7.0	6.2	5.3	4.2	3.4
28	3.2	2.9	3.1	3.3	2.9	3.3	(3.9)S	4.6H	4.7H	4.8H	5.2	5.3	5.4	5.4	5.1	4.9	4.6	4.7	5.0	5.6	5.2	4.5	4.0	3.2F
29	2.7	2.7H	[1.8]SF	1.5SJ	2.0F	2.8	3.5	(3.8)F	4.2H	4.5	5.0	5.1	5.2	6.6	6.0	6.1	6.8	5.8	6.4H	6.2	4.0	3.6	3.2F	2.7F
30	2.6F	[2.1]FK	K(1.5)SF	<1.0EK	F K	2.8K	3.3K	<3.5GK	<3.7GK	<3.9GK	<4.1GK	<4.1GK	<4.1GK	<4.0GK	4.1K	4.3K	4.1K	4.5K	4.9K	3.9K	3.5K	3.3K	3.2FK	2.7FK
31																								
Median	2.8	2.5	2.2	2.0	1.9	2.7	3.5	4.2	4.6	4.7	5.0	5.3	5.4	5.6	5.8	5.4	5.6	5.6	6.0	5.5	4.4	3.6	3.2	3.0
Count	30	27	28	27	27	28	29	29	29	29	29	29	30	29	29	29	29	29	29	29	30	30	30	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 70

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

h'F1 (Characteristic), Km (Unit), April (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., A.C.K.

Calculated by: E.J.W., A.C.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								240 HK	220 K	210 K	210 HK	180 HK	210 HK	220 K	210 K	210 K	230 K	230 K	270 K					
2								240 K	210 K	220 K	220 K	200 K	200 K	200 HK	250 K	230 HK	230 K	230 K	Q K					
3								Q K	240 K	240 K	230	220	200	210 H	230 H	220	240	250	270 H					
4								260 K	230 K	200 HK	190 H	180 HK	200 K	210 K	220 K	230 K	240 K	240 K	270 K					
5								Q K	210 K	200 K	190 K	190 K	180 HK	(200) SK	230 K	230 K	240 K	240 K	280 HK					
6								230 K	220 HK	220 HK	200 K	190 HK	180 HK	190 HK	210 HK	230 K	230 K	240 K	260 K					
7								250	230	210	200	200	210	210	220	220	230	230	250					
8								220 HK	230 K	200 HK	200 HK	210 K	180 HK	190 K	210 HK	240 K	230 K	240 K	260 K					
9								230 K	210 K	200 K	190 K	200 HK	200 K	200 K	210 K	240 K	240 K	240 K	250 K					
10								240	230	210 H	200 H	190 H	210	190 H	200	210	220	230	240					
11								230	220	210	200 H	190 H	190 H	200	200	220	230	230	240					
12								230	200	200	200 H	190 H	210 H	M	M	M	M	M	M					
13							Q	240	220	210	210	200	200	200	200	210	240	230	240					
14							Q	220	220	[220] M	[220] A	220	220	A	A	220	230 H	230	250					
15							Q	210 H	230	210	200 H	200 H	200	230	230	200 H	210	A	A					
16							Q	250	230	220	220	200 H	210 H	230	230	230	220 H	230	250					
17							250	250	210 H	210	200 H	200 H	A	A	A	230	230	230	230					
18							240	210 H	200	210 H	200	210	190	190	200 H	230	230	230	240					
19							250	230	220 K	210 K	200 K	200 K	210 K	200 K	220 K	230 K	230 K	250 K	250 K					
20							260	220	200	220 H	200	190	210	200	210	210	210	220	230					
21							230	230	220	210	180 HK	240 K	240 K	220 K	230 K	230 K	220 K	250 K	240 K					
22							Q K	Q K	220 K	200 K	190 HK	210 K	210 K	210 K	220 HK	220 HK	240 K	260 K	250 K					
23							Q K	230 K	220	200 H	200	200	190	190	200	210	220	220	250					
24							230	210	210	210	190 H	190 H	190	200	210	220	210	230	260					
25							250	240	(220) K	200 H	210 H	200	200	200	210	220	220	230	A					
26							220	230	210	200 H	200 H	190	180 H	210	200 H	230	230	230	250					
27							C	C	C	C	C	C	200	200	200	200	200	220	240					
28							Q	250	220	210	190 H	190 H	210 H	240	230	230	220	240	260					
29							250	230	220	190 H	190	190	210	210	240	210	230	240	250					
30							Q K	240 K	200 K	200 K	190 K	190 K	200 K	200 K	200 K	230 K	230 K	230 K	240 K					
31																								
Median							250	230	220	210	200	200	200	200	210	220	230	230	250					
Count							9	26	29	29	29	29	29	27	27	29	29	29	26					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 71

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

Form adopted June 1946

IONOSPHERIC DATA

foFl (Characteristic), Mc (Unit), April (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., A.C.K.

Calculated by: E.J.W., A.C.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								3.4 HK	3.6 K	3.8 K	4.0 HK	4.0 HK	4.0 HK	4.1 K	4.0 K	4.0 K	3.9 K	L K	L K					
2								L K	L K	4.1 K	[4.2] LK	4.3 K	4.5 K	4.4 K	4.3 K	4.2 HK	3.8 K	L K	Q K					
3								Q K	3.5 K	3.8 K	(4.0) S	4.2	4.2	4.2	4.1	4.0	3.8	3.4	L					
4								3.2 K	3.5 SK	3.8 HK	4.0 HK	4.0 HK	4.0 K	4.1 K	4.0 K	3.9 K	3.7 K	3.4 K	L K					
5								Q K	3.6 K	(3.8) SK	(3.9) SK	4.0 K	4.1 HK	(4.0) SK	4.0 K	(3.9) SK	3.7 K	3.4 K	L K					
6								3.4 K	3.7 HK	(3.8) SK	4.0 HK	4.0 HK	4.0 HK	4.1 HK	4.0 HK	3.9 K	3.8 K	3.4 K	L K					
7								L	L	4.0	4.4	4.3	4.3	4.2	4.2	4.1	3.8	3.5	L					
8								L K	3.8 K	3.9 HK	4.0 HK	4.1 K	4.2 HK	4.1 K	4.0 HK	4.0 K	3.7 K	3.5 K	L K					
9								L K	3.7 K	3.9 K	4.0 K	4.1 K	4.2 K	4.2 K	4.2 K	4.1 K	3.9 K	3.5 K	L K					
10								L	3.8	4.1 H	4.2 H	4.4 H	4.4	4.3 H	4.2	4.1	4.0	L	L					
11								3.4	3.9	(4.1) L	4.3 H	4.4 H	4.4 H	4.4	4.3	4.2	4.0	L	L					
12								(3.2) L	3.8	4.0	4.2 H	(4.4) H	4.4 H	M	M	M	M	M	M					
13							Q	3.4	3.8	4.1	4.3	4.4	4.4	4.5	4.1	L	L	L	L					
14							Q	L	3.8	[4.1] M	[4.3] A	4.4	4.4	[4.3] A	4.2	4.1	4.0	L	L					
15							Q	L	L	4.2	4.2 H	4.3 H	4.4	4.4	4.3	4.2 H	3.8	L	L					
16							Q	L	3.8	4.0	4.1	4.2 H	4.2 H	4.2	4.1	4.1	3.9	3.5	L					
17							L	3.4	3.7 H	3.9	4.2 H	4.2 H	4.3 H	4.3	4.2	4.2	3.9	L	L					
18							L	L	3.7	4.0 H	4.2	4.3	4.3	4.3	4.2 H	4.1	4.0	3.5	L					
19							L K	3.6 K	3.7 K	3.9 K	4.0 K	4.0 K	4.1 K	4.1 K	4.1 K	3.9 K	3.7 K	3.5 K	3.0 K					
20							L	3.4	3.7	4.0 H	4.2	4.3	4.3	4.3	4.3	4.2	4.0	3.6	L					
21							L	L	4.1	4.1	4.3 K	4.3 K	4.0 K	4.0 K	3.9 K	3.7 K	3.6 K	3.4 K	L K					
22							Q K	Q K	3.5 K	3.2 K	3.8 HK	4.0 K	4.0 K	4.0 K	4.0 HK	3.8 HK	3.7 K	3.5 K	3.0 K					
23							Q K	3.3 K	3.8	4.3 H	4.3	4.4	4.5	4.4	4.4	4.2	4.0	L	L					
24							L	L	L	4.2	4.5 H	4.5 H	4.6 H	4.6	4.5	4.2	4.1	3.7	L					
25							L	L	4.0	4.2 H	4.4 H	4.4	4.5	4.5	4.5	4.2	4.0	L	L					
26							L	3.5	3.8	4.2 H	4.3 H	4.4	4.5 H	4.5	4.3 H	4.3	4.1	3.7	L					
27							C	C	C	C	C	C	4.5	4.5	4.5 H	4.3	4.1	3.5	L					
28							Q	3.7	(4.0) L	4.1	4.1 H	4.1 H	4.2 H	4.2	4.1	4.0	3.9	3.7	3.1					
29							L	(3.3) L	3.8	4.0 H	4.2	4.3	4.3	4.2	4.1	4.0	3.8	3.6	L					
30							Q K	3.5 K	3.6 K	3.9 K	4.0 K	4.0 K	4.1 K	4.1 K	4.0 K	4.0 K	3.8 K	3.5 K	3.1 K					
31																								
Median							—	3.4	3.8	4.0	4.2	4.3	4.3	4.2	4.2	4.1	3.9	3.5	—					
Count								14	25	29	29	29	30	29	29	28	28	19	4					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 72

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

Form adopted June 1946

IONOSPHERIC DATA

h' E (Characteristic), Km (Unit), April (Month), 1952

National Bureau of Standards (Institution)

Observed at Washington, D. C.

Scaled by: Mc C., A. C. K.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

Calculated by: E. J. W, A. C. K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							S K	110K	110K	110K	110K	(100)AK	100K	110K	110K	110K	110K	120K	(130)SK					
2							S K	120K	110H	110K	110K	110K	110K	110K	110K	110K	110K	110K	(150)SK					
3							(130)SK	120K	110K	110HK	110	110	100	100	110	100	100	110	(130)S					
4							110SK	110K	110K	100K	100K	100K	100K	100K	100K	100K	110K	110K	(120)SK					
5							(120)SK	110K	100K	100K	100K	100K	100K	100K	100K	100K	100K	110K	(120)SK					
6							100K	110K	100K	100K	100K	100K	100K	100K	100K	100K	100K	110K	(130)SK					
7							S	110H	100	100	100	100	100	110	100H	100	100H	110	120					
8							(120)SK	110K	100K	100K	100K	100K	100K	100K	100K	100K	100K	110K	(110)SK					
9							(120)SK	110K	100K	100K	100K	100K	100K	100K	100K	100K	100K	110K	(120)SK					
10							100H	110	100	100	100	100	100	100	100	100	100	110	130S					
11							S	110	110	110	100	100	110	100	100	110	110	110	(120)S					
12							(130)S	110	100	100	100	100	100	M	M	M	M	M	M					
13							S	110	110	110	110	(120)A	100	100	100	100	100	110	(120)S					
14							(120)S	110	100	[100]M	110	100	(110)B	110	110	110	110	120	120					
15							(120)S	120	110	110	110	110	110	100	110	110	110H	110	(120)S					
16							S	(120)S	110	110	110	110	110	110	110	110	100	120	(120)S					
17							S	110	110H	110	110	100	100	100	110	110	110	110	120					
18							110	110	110	110	110	110	110	110	110	110	110	110	(130)S					
19							(130)S	110	110K	110K	110K	110K	110K	100K	100K	110K	110K	110K	120HK					
20							110	110	100	100	100	100	100	100	100	100	100	110	(120)S					
21							S	A	100	100	100K	100K	100K	100K	100K	100K	100K	110K	120K					
22							100K	110K	110K	110K	110K	100K	110K	110K	110K	110K	110HK	110K	120SK					
23							(120)SK	110K	110H	110	100	100	100	110	100	100	100	110	120					
24							120	110	110	100	100	100	110	110	100	100	100	110	120H					
25							110	110H	110	110	110	110	110	110	110	110	(100)A	110	120					
26							(110)A	110	110	110	110	110	110	110	110	110	110	120	130					
27							C	C	C	C	C	C	110	110	100	100	100	110	120					
28							120	110	110	100	100	100	100	100	100	100	100	110	130H					
29							130	120	110	110	100	100	100	100	100	100	100	110	110					
30							120K	110HK	100K	100K	100K	100K	100K	100K	100K	100K	100K	110K	120HK					
31																								
Median							120	110	110	110	100	100	100	100	100	100	100	110	120					
Count							21	28	29	29	29	29	30	29	29	29	29	29	29					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 73

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

foE (Characteristic), Mc (Unit), April (Month), 1952

Observed at Washington, D. C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: Mc C., A.C.K.

Calculated by: E.J.W., A.C.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							S K	2.1 K	2.5 K	2.7 K	(2.9) P K	(3.1) P K	(3.2) P K	3.1 K	3.0 K	2.9 K	2.7 K	2.3 K	(1.9) S K					
2							S K	2.2 K	2.5 K	2.8 K	3.0 K	(3.1) P K	3.2 K	3.2 K	3.1 K	3.0 K	2.7 K	2.3 K	1.9 K					
3							1.7 K	2.1 K	2.6 K	2.8 K H	3.0	3.1	3.2	3.1	3.1	2.9	2.7	2.3	1.8					
4							1.7 K	2.2 K	2.5 K	2.8 K	3.0 K	3.1 K	3.1 K	3.1 K	3.0 K	2.9 K	2.7 K	2.3 K	2.0 K					
5							1.7 K	2.2 K	2.5 K	2.8 K	3.0 K	(3.1) P K	(3.1) P K	(3.6) P K	(3.0) P	2.8 K	2.6 K	2.2 K	2.0 K					
6							1.7 K	2.2 K	2.5 K	2.8 K	3.0 K	(3.1) P K	3.1 K	(3.1) P K	3.0 K	2.9 K	2.7 K	2.2 K	1.8 K					
7							S	2.2 H	2.6	2.8	3.0	3.1	(3.2) P	3.1	3.0 H	2.9	2.7 H	2.2	1.8					
8							1.7 K	2.2 K	2.5 K	2.8 K	3.0 K	[3.1] S K	[3.1] A K	3.1 K	3.0 K	(2.9) P K	2.6 K	2.4 K	2.0 K					
9							1.7 K	2.2 K	2.5 K	2.8 K	3.0 K	3.1 K	3.1 K	3.1 K	3.0 K	2.4 K	2.7 K	2.4 K	1.9 K					
10							1.7 H	(2.3) P	(2.6) P	2.8	3.0	[3.1] A	3.2	3.2	3.1	3.0	2.8	2.3	(1.8) P					
11							A	2.3	2.6	2.8	3.0	A	A	A	3.2	[3.0] A	2.8	2.4	1.7					
12							1.7	2.3	2.7	2.9	(3.0) P	3.1	A	M	M	M	M	M	M					
13							1.8	2.2	2.6	(2.8) P	A	A	(3.2) P	3.2	3.2	3.1	2.6	2.3	1.8					
14							1.7	2.3	2.7	[2.9] M	A	A	A	A	(3.1) A	3.0	2.8	2.4	1.9					
15							1.6	2.3	(2.6) P	2.9	3.1	(3.2) P	(3.2) P	3.2	A	A	2.7 H	A	A					
16							S	2.2	2.6	2.8	3.0	3.1	(3.2) P	(3.2) P	(3.1) P	3.0	2.7	2.4	1.9					
17							1.7	2.3	2.6 H	2.8	2.9	3.1	3.2	3.2	3.1	3.0	2.7	2.3	1.9					
18							1.7	2.3	2.7	(2.9) P	3.1	3.2	3.2	(3.2) P	3.1	2.9	2.7	2.3	1.8 H					
19							1.7	2.2	(2.6) P K	3.0 K	3.1 K	3.2 K	3.3 K	3.2 K	3.1 K	3.0 K	2.7 K	2.3 K	2.0 H K					
20							(1.7) P	2.2	2.4	(2.8) P	3.1	3.2	3.3	3.3	3.1	3.0	2.7	2.4	2.0					
21							1.7	2.3	2.7	3.0	3.1 K	[3.2] A K	3.2 K	3.2 K	3.1 K	2.9 K	2.8 K	2.4 K	1.8 K					
22							(1.9) A K	2.5 K	2.7 K	2.8 K	3.0 K	3.2 K	3.2 K	3.2 K	3.2 K	3.0 K	2.9 H K	2.3 K	1.9 H K					
23							1.9 H K	2.4 K	2.8 H	2.9	(3.1) P	(3.3) P	3.3	3.2	3.1	3.0	2.8	2.4	1.8					
24							1.9	2.4	2.8	3.0	(3.1) P	3.2	3.3	3.3	3.2	3.0	2.8	2.5	1.9 H					
25							1.8	2.4 H	2.8	A	A	3.2	A	A	(3.2) A	3.1	2.9	[2.4] A	1.9					
26							1.9	2.4	2.8	3.0	(3.1) P	3.3	3.3	3.3	3.2	3.1	2.8	2.5	2.0					
27							C	C	C	C	C	C	A	3.3	3.2	3.1	2.9	2.5	1.9					
28							1.9	2.5	2.7	[2.9] A	(3.1) P	(3.2) P	[3.2] A	(3.2) P	3.2	3.0	2.8	2.5	2.1 H					
29							1.9	2.4	2.6	2.9	3.0	[3.2] A	[3.2] A	3.2	3.2	3.0	2.7	2.4	2.2					
30							1.9 K	2.4 H K	2.7 K	2.9 K	3.1 K	3.1 K	3.2 K	3.2 K	3.1 K	3.0 K	[2.8] A K	2.4 K	2.1 H K					
31																								
Median							1.7	2.3	2.6	2.8	3.0	3.1	3.2	3.2	3.1	3.0	2.7	2.4	1.9					
Count							24	29	29	28	26	26	25	26	28	28	29	28	28					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 74

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

Es (Characteristic), Mc, Km (Unit), April (Month), 1952

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Scaled by: McC., A.C.K.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

Calculated by: E.J.W., A.C.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E	E	E	E	E	S	G	G	G	G	28 100	G	G	G	G	G	G	G	C	E	E	E	E
2	E	E	E	E	E	E	S	30 130	G	68 110	G	G	G	G	G	G	G	G	G	E	E	E	E	E
3	E	E	E	E	E	E	G	G	G	6.8Y 110	G	G	G	G	G	G	G	G	G	E	E	E	E	E
4	E	E	E	E	E	E	G	G	60Y 130	G	G	G	G	9.3Y 100	G	G	G	G	G	E	E	E	E	E
5	E	E	E	E	S	S	G	G	G	G	60Y 100	G	G	G	G	G	G	G	G	E	E	E	E	E
6	E	E	E	E	E	E	G	G	G	96 110	G	G	G	G	G	G	G	G	G	E	E	E	E	E
7	E	E	E	E	E	E	S	G	G	G	G	G	100 130	40 110	G	G	G	G	21 120	31 120	E	E	E	E
8	E	E	E	E	E	E	G	G	G	G	G	G	34 110	G	G	G	G	G	G	E	22 120	E	E	E
9	E	36 110	E	E	E	E	G	G	G	G	G	54 100	G	G	G	26 100	G	G	G	E	E	E	E	E
10	E	E	E	E	E	E	G	G	G	G	94 100	3.5 110	G	G	G	G	G	G	G	E	E	E	3.2 110	E
11	E	E	E	E	E	E	1.7 130	G	G	G	33 110	42 110	8.0Y 110	36 110	G	36 110	66 120	G	G	E	E	E	E	E
12	E	E	E	E	E	E	G	56 100	74 140	G	G	G	33 100	M	M	M	M	M	M	E	E	E	E	E
13	E	E	E	E	E	E	G	60Y 100	G	G	45 120	4.2 120	42 110	G	37 110	G	G	G	G	E	E	E	E	E
14	E	E	E	E	E	E	G	G	G	M	58 110	50 110	70 120	70 110	6.0 120	G	90s 110	G	G	E	E	E	33 110	27 110
15	E	E	E	E	E	E	G	G	G	G	G	G	G	G	45 120	30 120	G	52 110	60H 120	6.4 120	56Y 130	2.9 130	30 130	E
16	E	E	E	E	E	E	S	G	G	G	10.0Y 120	G	G	G	G	G	G	G	G	E	E	E	E	E
17	E	E	E	E	E	E	G	G	G	G	G	G	53 120	5.0 120	4.7 120	4.1Y 120	G	G	G	E	E	E	E	E
18	2.2 110	E	E	E	E	32 110	G	G	G	G	G	G	G	G	G	G	35 130	35 110	G	E	E	E	E	E
19	E	21 130	54Y 100	23 110	E	E	G	G	G	4.3 100	G	G	G	G	G	G	G	G	G	E	E	25 110	E	E
20	E	23 130	2.3 120	E	E	E	46Y 110	G	G	G	72 130	G	G	G	G	G	G	1.7 90	G	E	23 110	E	E	E
21	E	E	E	E	36Y 120	E	G	70Y 100	G	G	G	35 110	G	G	G	G	G	G	44H 120	32 130	(38)s 130	23 140	2.3 150	E
22	E	E	S	38 120	E	22Y 140	70Y 110	G	G	G	G	G	G	G	G	G	G	G	G	30 120	32 110	41 110	E	E
23	E	E	E	E	E	E	G	G	G	G	G	G	G	G	G	G	G	G	G	33Y 120	26Y 110	26 110	E	E
24	E	E	23 100	28 100	E	E	G	G	G	G	G	G	G	G	G	G	G	G	G	40 120	1.2 130	11 120	E	1.3 110
25	27 110	E	19Y 120	25 110	33 110	37 120	22 120	G	43 120	33 120	33 120	80Y 130	41 110	4.1 110	40 110	36 110	3.5 100	33Y 110	2.0 100	1.1 100	E	E	31 110	E
26	E	50 120	22 110	74 110	37 110	12 110	17 110	G	G	G	G	7.4 120	35 120	G	G	G	G	G	G	1.2 120	33 110	E	E	30 110
27	E	26Y 110	C	C	C	C	C	C	C	C	C	C	3.3 110	G	G	G	G	G	G	13 100	E	2.3 100	E	E
28	E	E	E	E	35 130	E	G	58 100	4.3 110	40 110	G	G	66 110	G	G	G	G	G	G	1.3 100	E	E	E	E
29	E	E	E	E	40 130	E	G	G	G	G	G	86 110	54Y 100	38Y 100	38Y 100	G	G	G	G	E	E	2.5Y 140	22Y 160	25 120
30	28 130	E	38 110	E	E	1.2 120	G	G	G	G	G	G	G	G	G	7.0 110	30 110	G	G	1.2 110	E	E	E	30 150
31																								
Median	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Count	30	30	28	29	28	28	25	29	29	28	29	29	30	29	29	29	29	29	29	29	30	30	30	30

** MEDIAN fEs LESS THAN foE, OR LESS THAN LOWER FREQUENCY LIMIT OF THE RECORDER

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 75

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

(M1500)F2 (Characteristic) ____ (Unit) April (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: Mc C., A.C.K.

Calculated by: E.J.W., A.C.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	K1.9 SF	1.9 K	1.8 SK	(1.8) SK	E K	E K	2.1 K	G K	G K	G K	G K	G K	(1.6) SK	1.8 K	1.9 K	2.0 K	2.0 K	2.0 K	2.0 K	C K	1.9 SK	(1.8) SK	(1.8) SK	1.8 SK
2	1.8 SK	1.9 SK	2.0 FK	2.2 SK	E K	E K	2.0 K	K(2.1) SJ	2.0 K	2.2 SK	2.0	2.2 HK	2.0 K	1.9 K	2.0 K	2.0 K	1.9 K	2.1 K	2.2 K	K2.0 HS	K2.1 HF	K1.7 SF	K(1.7) FS	K(1.8) SF
3	K(1.8) SF	1.8 FK	K(1.9) FJ	K(1.8) FS	(1.8) FK	1.8 FK	2.1 K	2.3 K	1.7 SK	G K	1.7	1.6 F	1.9	1.9	1.8 H	2.0 H	1.9 H	1.9	1.9	2.0	1.8 S	(1.8) S	1.7 S	(1.8) F
4	(1.8) SF	(1.8) SF	S K	E K	E K	E K	2.0 K	G K	G K	G K	G K	G K	G K	1.7 HK	1.7 HK	1.8 K	1.9 K	2.0 K	2.1 SK	2.0 K	2.1 K	2.0 SK	K1.7 S	1.8 FK
5	1.7 FK	1.8 FK	1.9 FK	K(1.6) JS	S FK	S FK	2.0 K	2.3 K	G K	G K	G K	G K	G K	G K	1.7 HK	1.9 K	1.9 K	2.1 K	1.9 K	2.1 SK	1.9 K	K1.8 SF	1.7 SK	1.8 FK
6	1.8 K	K(1.8) JS	E K	E K	E K	(1.7) FK	2.1 K	G K	G K	G K	G K	G K	G K	G K	1.6 K	1.8 K	1.9 K	1.9 K	2.0 SK	2.1 SK	2.1 S	1.9 S	1.9 F	2.0 S
7	2.0 F	2.0 F	1.9 F	1.7 S	1.8 F	1.8 F	2.3	2.2 S	1.9	1.9	(1.9) SH	1.8	1.8 H	2.0	2.0	2.0	1.9	2.0	2.2	(2.1) JS	(2.1) S	2.0 SF	1.9 F	1.9 F
8	2.0 FK	K(1.9) JF	F K	F K	K(1.6) FJ	E K	2.3 K	K(2.1) JS	G K	G K	G K	G K	G K	1.6 K	1.6 K	1.7 K	1.7 K	1.9 K	1.9 K	2.1 K	K2.1 SF	K(2.3) K	K(1.7) JS	(1.7) SK
9	K(1.8) JS	K(1.9) JF	F K	E K	E K	F K	2.1 K	1.9 SK	G K	G K	1.6 K	1.6 HK	1.6 K	1.6 FK	1.9 K	2.0 K	2.1 K	2.0 K	2.1 K	2.0	2.0	1.9	1.8	1.8
10	1.9	1.8 F	1.8 F	1.7 S	(1.9) FJ	(1.8) F	2.2	2.3 S	1.9	1.9 H	2.0	1.9	1.9	2.1 H	2.0	2.2	2.0	2.1	2.2	2.3	2.2	2.1	2.0	1.9 F
11	1.9 F	1.9 F	1.9 F	1.8 F	(1.8) F	(1.7) F	2.2	2.2	2.1 H	1.9 H	1.8	2.0	2.2	2.0	2.0	2.1	2.1	2.1	2.2	2.3	2.1 S	2.0	1.9	1.9
12	1.9	1.9 F	2.0 F	2.0 F	1.9 F	(1.9) F	2.1	1.8 H	2.2	2.0 H	1.9 H	1.9 H	2.0	M	M	M	M	M	M	2.2	2.1	2.0	(1.9) S	1.9
13	(1.8) S	1.9	1.9	2.2	2.0	1.9	2.1 H	2.1	2.0 H	1.9	2.0 H	2.3	2.3	2.1	2.1	2.1	2.2	2.1	2.3	2.2	2.1	(2.0) FS	(2.0) SF	2.0 F
14	1.9 F	(1.9) F	2.0 F	(2.0) SF	(2.0) F	2.0 F	2.2	2.2	2.3 H	M	2.0	2.0	1.8	1.9	2.1	2.0	2.1	2.1	2.2	2.2	2.1	1.9	(1.9) S	(2.0) S
15	2.0	2.0	2.0	2.1 S	2.0 F	2.0	2.4	2.3	2.2	2.0	2.0	1.9 H	2.0 H	2.1	2.0	2.2	2.2	2.1	2.1	2.2	2.0	2.0	(2.0) S	(2.0) F
16	(1.9) SF	1.9	1.9	1.8	1.8	2.0	2.2	2.0	1.9	1.7	1.7	1.6	1.8	1.9	2.0	2.0	2.0	2.1	2.1	2.2	2.1	2.0	1.9	1.9
17	1.9	1.9	1.9 F	2.0	2.1	2.0	2.2	2.1	2.1 H	2.0 H	2.0 H	2.0 H	2.0 H	2.0	2.0	2.1	2.2	2.2	2.2	2.3	2.3	2.1	2.0	1.9
18	1.9	1.9 F	1.8	1.9	2.0	2.0	2.4	2.3 H	2.4	1.9 H	2.0 H	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	(2.2) S	2.2	2.3	2.0	1.9
19	2.0 F	2.0 F	(2.1) JS	2.0 F	2.2 F	[illegible]	2.2	(1.7) S	K(1.7) JS	G K	G K	G K	1.6 K	1.5 K	G K	1.8 K	1.7 K	1.7 K	2.0 K	2.0 K	2.1 K	2.2 K	1.7 K	K(1.7) JS
20	K(1.7) JS	K(1.8) JS	1.9 K	1.8 K	2.0	2.0	2.3	2.0	1.7	2.0	1.9	2.1	1.9	2.1	2.2	2.2	2.0	2.1	2.1	2.1	2.2	2.1	2.0	1.9
21	2.0	2.0	1.9	2.0	2.1	1.9	2.2	1.9	2.0	2.0	1.8 HK	1.4 K	1.6 K	1.6 K	(1.4) HK	1.5 K	1.8 K	1.8 K	(1.8) HK	2.0 K	2.0 K	2.2 K	K(1.7) JS	E K
22	E K	E K	F SK	(1.9) FK	S FK	(1.7) FK	2.1 K	2.3 K	G K	G K	G K	G K	G K	G K	G K	G K	1.6 K	1.8 K	2.0 K	2.0 K	2.1 SK	2.0 K	2.0 FK	1.9 FK
23	2.0 FK	F K	(1.9) FK	E K	E K	K(2.1) PS	2.3 K	G K	2.0	2.0	2.2	2.0	2.0	2.0	2.0	2.1	2.2	2.1	2.2	2.1	2.0	2.1	2.0	2.0
24	2.0	1.9 F	(1.8) F	(2.0) FS	2.1 F	2.1	2.4	2.4	2.2 H	2.4	2.1	2.0 H	1.9	1.9	2.0	2.1	2.0	2.0	2.1	2.3	2.2	2.0	2.0	2.0
25	2.0	2.0 F	1.9 F	2.0 F	2.0 F	2.3	2.4	2.2	2.2	2.2	2.1 H	2.3	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.2	2.1	2.1	2.0
26	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.0 H	2.2 H	2.4 H	2.1	2.1	1.9 H	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.2	2.1 F	2.0 F
27	2.0 F	2.0 F	C	C	C	C	C	C	C	C	C	C	2.1	2.1	2.1	2.2	2.2	2.1	2.0	2.0	2.1	2.0	2.0	2.1
28	1.9	1.9 F	1.8	1.9 F	2.2	2.0	2.2	2.2	1.9 H	2.0	1.7 H	1.6	1.7 H	1.7 H	1.8 H	1.8	1.9	1.8	1.9	2.0	2.0	2.0	1.9	2.0
29	1.9	(1.8) S	(1.7) SF	(1.7) S	(1.7) SF	2.0 F	2.1	2.3	G	1.9	1.9	1.9	1.8	1.8	1.6 H	2.0	1.7	2.1	1.9	2.0	2.4	1.8	1.8	1.9
30	(1.9) F	(1.7) FK	(1.8) FK	K(1.8) SF	E K	2.0 FK	2.2 K	G K	G K	G K	G K	G K	G K	G K	G K	1.5 K	1.8 K	2.0 K	2.0 K	2.0 K	1.9 K	1.6 K	1.7 K	(1.8) FK
31																								
Median	1.9	1.9	1.9	1.9	2.0	2.0	2.2	2.1	1.9	1.9	1.9	1.9	1.8	1.9	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	1.9	1.9
Count	29	28	24	24	20	23	29	29	29	28	29	29	30	29	29	29	29	29	29	29	30	30	80	29

Sweep 1.0 Mc to 25.0 Mc In 0.25 min

Manual ☐ Automatic ☒

TABLE 76

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

(M3000)F2 (Characteristic), ______ (Unit), April (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: Mc C., A.C.K.

Calculated by: E.J.W., A.C.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	K28 SF	28 K	27 SK	(27) SK	E K	E K	31 K	G K	G K	G K	G K	G K	(24) SK	27 K	28 K	29 K	30 K	30 K	30 K	C K	29 SK	(27) SK	(27) SK	27 SK
2	27 SK	28 SK	29 FK	32 SK	E K	E K	30 K	K(31) SJ	30 K	32 SK	30 K	32 HK	30 K	28 K	29 K	30 K	29 K	31 K	32 K	K30 HS	K31 HF	K26 SF	K(26) FS	K(28) SF
3	K(27) SF	27 FK	K(29) FJ	K(27) FS	(27) FK	27 FK	31 FK	33 K	26 SK	G K	26	25 F	29	28	27 H	30 H	28 H	28	28	30	28 S	(27) S	26 S	(27) F
4	(27) SF	(27) SF	S FK	E K	E K	E K	30 K	G K	G K	G K	G K	G K	G K	26 HK	26 HK	27 K	28 K	30 K	30 SK	30 K	31 SK	30 SK	K26 FS	27 FK
5	26 FK	27 FK	28 FK	K(25) JS	S FK	S FK	30 K	33 K	G K	G K	G K	G K	G K	G K	26 HK	28 K	28 K	31 K	28 K	31 SK	29 K	K27 SF	26 SK	27 FK
6	27 K	K(27) JS	E K	E K	E K	(26) FK	31 K	G K	G K	G K	G K	G K	G K	G K	25 K	27 K	28 K	29 K	30 SK	31 SK	31 S	29 S	28 F	30 S
7	30 F	30 F	28 F	26 S	27 F	27 F	33	32 S	29	29	(28) SH	28	27 H	29	30	30	29	30	32	(31) JS	(31) S	29 SF	29 F	28 F
8	30 SK	K(29) JF	F K	F K	K(24) FJ	E K	33 K	K(31) JS	G K	G K	G K	G K	G K	25 K	24 K	26 K	25 K	29 K	28 K	31 K	K31 SF	(33) SK	K(26) JS	(26) SK
9	K(27) JS	K(28) JF	F K	E K	E K	F K	31 K	29 SK	G K	G K	24 K	24 HK	25 K	25 FK	28 K	30 K	31 K	30 K	31 K	30	30	29	27	27
10	28	28 F	27 F	26 S	(28) FJ	(27) F	32	33 S	29	28 H	29	28	28	31 H	30	32	30	31	32	33	32	31	30	29 F
11	29 F	29 F	28 F	27 F	(27) F	(26) F	32	32	31 H	28 H	27	29	32	30	30	31	31	31	32	33	31 S	30	29	28
12	29	29 F	29 F	29 F	28 F	(28) F	31	27 H	32	30 H	29 H	28 H	30	M	M	M	M	M	M	32	31	30	(28) S	28
13	(27) S	28	28	32	30	28	31 H	31	30 H	29	30 H	33	33	31	31	31	32	31	33	32	31	(30) FS	(30) SF	29 F
14	28 F	(28) F	29 F	(30) SF	(30) F	30 F	32	32	33 H	M	30	30	27	29	31	30	31	31	32	32	31	28	(29) S	(30) S
15	30	30	30	31 S	30 F	30	35	33	32	30	30	28 H	30 H	31	30	32	32	31	31	32	29	30	(29) S	(29) F
16	(29) SF	28	28	27	27	29	32	30	29	26	25	25	27	28	30	29	30	31	31	32	31	30	29	28
17	28	28	28 F	30	31	30	32	31	31 H	30 H	30 H	30 H	29 H	30	30	31	32	32	32	33	33	31	29	28
18	28	28 F	27	28	30	30	34	33 H	34	28 H	30 H	32	30	30	30	30	29	30	30	(32) S	32	33	30	28
19	30 F	30 F	(31) JS	30 F	32 F	30	32	(25) S	K(26) JS	G K	G K	G K	25 K	23 K	G K	27 K	26 K	26 K	29 K	30 K	31 K	32 K	26 K	K(26) JS
20	K(26) JS	K(27) JS	28 K	27 K	30	29	33	30	26	30	28	31	29	31	32	32	30	31	31	31	32	31	29	28
21	30	30	28	30	31	28	32	28	30	29	27 HK	21 K	25 K	24 K	(21) HK	23 K	27 K	27 K	(27) HK	30 K	30 K	32 K	K(26) JS	E K
22	E K	E K	F SK	(29) FK	F SK	(25) FK	31 K	34 K	G K	G K	G K	G K	G K	G K	G K	G K	23 K	28 K	30 K	30 K	31 SK	30 K	30 FK	29 FK
23	30 FK	F K	(28) FK	E K	E K	K(31) SG	33 K	G K	30	30	32	30	29	30	30	31	32	31	32	31	30	31	30	29
24	30	29 F	(27) F	(30) FS	31 F	31	34	34	32 H	34	31	30 H	28	28	30	31	31	29	31	33	32	30	29	30
25	30	30 F	28 F	29 F	29 F	33	34	32	32	32	31 H	33	32	31	31	31	31	32	32	31	32	31	30	30
26	29	30	29	30	31	31	32	30 H	32 H	34 H	31	31	28 H	30	30	30	30	30	31	30	30	32	31 F	30 F
27	29 F	30 F	C	C	C	C	C	C	C	C	C	C	31	31	31	32	32	31	30	30	31	30	30	31
28	29	28 F	27	28 F	32	30	32	32	28 H	30	26 H	24	26 H	26 H	27 H	27	28	27	28	30	30	30	28	29
29	28	(27) S	(26) SF	(26) S	(25) SF	29 F	31	33	G	28	28	29	27	27	25 H	29	26	31	28	30	34	27	27	29
30	(28) F	(26) FK	(27) FK	K(27) SF	E K	29 FK	32 K	G K	G K	G K	G K	G K	G K	G K	G K	22 K	27 K	30 K	30 K	30 K	28 K	25 K	26 K	(27) FK
31																								
Median	28	28	28	28	30	29	32	31	29	28	28	28	28	28	30	30	30	30	31	31	31	30	29	28
Count	29	28	24	24	20	23	29	29	29	28	29	29	30	29	29	29	29	29	29	29	30	30	30	29

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 77

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

(M3000)F1, ______ (Characteristic) (Unit), April (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

IONOSPHERIC DATA

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: Mc C., A.C.K.

Calculated by: E.J.W., A.C.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								3.5 HK	3.5 K	3.8 K	3.7 HK	4.1 HK	3.8 HK	3.7 K	3.9 K	3.7 K	3.5 K	L K	L K					
2								L K	L K	3.6 K	L K	4.0 K	3.5 K	3.8 HK	3.6 K	3.5 HK	3.6 K	L K	Q K					
3								Q K	3.3 K	3.5 K	(3.5) S	3.6	3.6	3.5 H	3.6	3.6	3.4	3.3	L					
4								3.5 K	3.7 SK	3.8 HK	3.7 HK	3.9 HK	3.9	3.8 K	3.6 K	3.5 K	3.6 K	3.5 K	L K					
5								Q K	3.7 K	(3.7) SK	(4.0) SK	4.0 K	3.8 HK	(3.8) SK	3.7 K	(3.6) SK	3.4 K	3.5 K	L K					
6								3.5 K	3.6 HK	(3.7) SK	4.0 HK	4.0 HK	4.0 K	3.8 HK	3.8 HK	3.6 K	3.5 K	3.4 K	L K					
7								L	L	3.5	3.6	3.8	3.7	3.6	3.5	3.6	3.5	3.5	L					
8								L K	3.6 K	3.9 HK	4.0 HK	3.9 K	4.0 HK	3.8 K	3.5 HK	3.5 K	3.5 K	3.5 K	L K					
9								L K	3.6 K	4.1 K	4.0 K	4.0 HK	3.9 K	3.7 K	3.5 K	3.5 K	3.5 K	3.5 K	L K					
10								L	3.5	3.6 H	3.7 H	3.7 H	3.7	3.7 H	3.8	3.6	3.5	L	L					
11								3.7	3.6	(3.7) L	3.7 H	3.8 H	3.6 H	3.8	3.7 H	3.5	3.5	L	L					
12								(3.7) L	3.8	3.7	3.7 H	(3.7) H	3.8 H	M	M	M	M	M	M					
13							Q	3.6	3.7	3.6	3.7	3.7	3.8	3.7	3.9	L	L	L	L					
14							Q	L	3.7	M	A	3.6	3.7	A	3.7	3.7	3.6	L	L					
15							Q	L	L	3.5	3.6 H	3.6 H	3.8	3.6	3.8	3.5 H	3.7	L	L					
16							Q	L	3.4	3.6	3.7	3.7 H	3.7 H	3.8	3.8	3.6	3.6 H	3.4	L					
17							L	3.4	3.7 H	4.1	3.7 H	3.9 H	3.5 H	3.7	3.5	3.5	3.7	L	L					
18							L	L	3.7	4.0 H	3.9	3.9	4.0	3.6	3.6 H	3.5	3.4	3.6	L					
19							L	3.5	3.5 K	3.6 K	3.8 K	3.8 K	3.6 K	3.8 K	3.7 K	3.6 K	3.7 K	3.4 K	3.4 K					
20							L	3.4	3.7	3.8 H	3.8	3.6	3.7	3.8	3.6	3.6	3.6	3.6	L					
21							L	L	3.5	3.6	3.6 K	3.5 K	3.6 K	3.7 K	3.7 K	3.7 K	3.6 K	3.5 K	L K					
22							Q K	Q K	3.6 K	4.0 K	4.1 HK	4.0 K	3.8 K	4.0 K	4.0 HK	3.8 HK	3.6 K	3.3 K	3.5 PK					
23							Q K	3.6 K	3.7	3.7 H	3.9	4.0	3.8	3.9	3.5	3.6	3.6	L	L					
24							L	L	L	3.8	3.7 H	3.9 H	3.8 H	3.5	3.5	3.6	3.6	3.5	L					
25							L	L	3.7	3.7 H	3.7 H	3.8	3.9	3.8	3.6	3.7	3.6	L	L					
26							L	3.7	3.8	3.7 H	3.9 H	4.0	3.6 H	3.7	3.6 H	3.5	3.5	3.4	L					
27							C	C	C	C	C	C	3.8	3.8	3.7 H	3.7	3.6	3.7	L					
28							Q	3.3	(3.5) L	3.6	4.0 H	4.0 H	3.7 H	3.6	3.7	3.7	3.5	3.4	3.3					
29							L	(3.7) L	3.7	4.0 H	3.7	3.9	3.7	3.6	3.6	3.7	3.5	3.7	L					
30							Q K	3.4 K	3.7 K	4.0 K	4.1 K	4.2 K	3.8 K	3.9 K	3.8 K	3.6 K	3.6 K	3.4 K	3.4 K					
31																								
								.																
Median							—	3.5	3.7	3.7	3.7	3.9	3.8	3.8	3.7	3.6	3.6	3.5	—					
Count								14	25	28	27	29	30	28	29	28	28	19	4					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 78

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

Form adopted June 1946

IONOSPHERIC DATA

(M1500)E, ______ (Characteristic) (Unit), April (Month), 1952

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Scaled by: Mc C., A. C. K.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

Calculated by: E. J. W., A. C. K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							SK	4.1K	4.0K	4.2K	(4.2)PK	(4.2)PK	(4.0)PK	4.0K	4.2K	4.1K	4.2K	4.1K	(3.7)SK					
2							SK	4.2K	4.2K	4.1K	4.1K	(4.1)PK	4.2K	4.1K	3.9K	4.2K	4.1K	4.3K	3.5K					
3							4.2K	4.1K	3.9K	4.1HK	4.0	4.1	4.0	4.2	4.2	4.3	4.2	4.1	3.9					
4							4.4K	4.3K	4.1K	4.2K	4.2K	4.4K	4.2K	4.3K	4.2K	4.2K	4.2K	4.3K	3.6K					
5							4.2K	4.2K	4.2K	4.3K	4.2K	(4.2)PK	(4.3)PK	(4.4)PK	(4.2)PK	4.2K	4.2K	4.3K	4.1K					
6							4.4K	4.4K	4.4K	4.2K	4.3K	(4.3)PK	4.2K	(4.2)PK	4.2K	4.2K	4.2K	4.2K	4.1K					
7							S	4.1H	4.1	4.2	4.2	4.1	(4.2)P	4.3	4.2H	4.1	4.1H	4.1	4.3					
8							4.2K	4.3K	4.2K	4.3K	4.4K	SK	AK	4.4K	4.2K	(4.2)PK	4.0K	4.0K	4.0K					
9							4.2K	4.2K	4.2K	4.4K	4.3K	4.3K	4.3K	4.2K	4.3K	4.0K	4.0K	4.0K	4.0K					
10							4.3H	(4.3)P	(4.2)P	4.2	4.3	A	4.1	4.2	4.2	4.1	4.1	4.2	(4.1)P					
11							A	4.1	4.2	4.2	4.3	A	A	A	4.3	A	4.3	4.3	4.2					
12							4.2	4.2	4.3	4.3	(4.3)P	4.4	A	M	M	M	M	M	M					
13							4.2	4.1	4.1	(4.2)P	A	A	(4.2)P	4.1	4.3	4.2	4.4	4.1	4.4					
14							4.2	4.3	4.2	M	A	A	A	A	(4.2)A	4.2	4.2	4.2	4.1					
15							4.3	4.3	(4.1)P	4.1	4.1	(4.1)P	(4.2)P	4.2	A	A	4.2H	A	A					
16							S	4.2	4.2	4.2	4.2	4.2	(4.2)P	(4.1)P	(4.1)P	4.2	4.2	4.3	4.0					
17							4.0	3.9	4.1H	4.1	4.1	4.1	4.0	4.1	4.2	4.1	4.2	4.2	3.8					
18							4.1	4.1	4.1	(4.1)P	4.2	4.3	4.2	(4.1)P	4.0	4.0	4.2	4.1	3.7H					
19							4.1	4.3	(4.1)PK	4.2K	3.8K	4.1K	3.9K	4.2K	4.2K	4.0K	4.1K	4.1K	4.0HK					
20							(4.3)P	4.3	4.2	(4.3)P	4.2	4.2	4.1	4.2	4.2	4.3	4.2	4.2	4.3					
21							4.2	3.9	4.2	4.5	4.2K	AK	4.1K	4.1K	4.2K	4.2K	4.3K	4.1K	4.2K					
22							(4.2)AK	4.1K	4.2K	4.1K	4.2K	4.2K	4.3K	4.2K	4.2K	4.3K	3.8HK	4.1K	4.0HK					
23							3.8HK	4.1K	4.1H	4.3	(4.2)P	(4.1)P	4.3	4.3	4.2	4.2	4.2	4.2	4.2					
24							3.8	3.9	4.0	4.1	(4.2)P	4.1	4.0	4.0	4.2	4.2	4.2	4.1	4.0					
25							4.0	4.2H	4.2	A	A	4.4	A	A	(4.1)A	4.1	4.1	A	4.1					
26							4.2	4.0	4.1	4.3	(4.3)P	4.0	4.2	4.2	4.1	4.1	4.1	4.1	4.1					
27							C	C	C	C	C	C	A	4.4	4.3	4.5	4.6	4.2	4.4					
28							4.0	3.9	4.2	A	(4.1)P	(4.2)P	A	(4.3)P	4.2	4.4	4.2	4.0	3.7H					
29							4.3	3.9	4.3	4.3	4.3	A	A	4.1	4.4	4.3	4.4	4.4	3.8					
30							4.1K	4.0HK	4.4K	4.4K	4.4K	4.4K	4.3K	4.2K	4.3K	4.1K	AK	4.2K	3.7K					
31																								
Median							4.2	4.1	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.0					
Count							24	29	29	26	26	22	22	26	28	27	28	27	28					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Table 79

Ionospheric Storminess at Washington, D. C.

April 1952

Day	Ionospheric character* 00-12 GCT	Ionospheric character* 12-24 GCT	Principal storms Beginning GCT	Principal storms End GCT	Geomagnetic character** 00-12 GCT	Geomagnetic character** 12-24 GCT
1	4	4	###	----	4	4
2	4	4	----	----	5	5
3	4	3	----	1500	6	4
4	4	4	0700	----	5	5
5	4	4	----	----	5	4
6	4	4	----	----	5	4
7	2	1	----	0100	5	4
8	4	5	0500	----	4	4
9	4	4	----	2400	4	3
10	2	1			5	3
11	2	2			3	2
12	1	1			3	2
13	1	2			3	2
14	0	1			2	3
15	1	1			3	3
16	1	3			4	3
17	2	2			4	2
18	2	2			1	3
19	1	5	1300	----	3	4
20	5	2	----	0900	3	2
21	1	4	1500	----	4	7
22	7	5	----	----	5	3
23	4	1	----	1300	4	3
24	1	3			2	3
25	1	2			2	2
26	1	2			2	2
27	1	2			2	2
28	1	2			4	3
29	3	2			5	5
30	4	6	0600	----	5	4

*Ionosphere character figure (I-figure) for ionospheric storminess at Washington, D. C., during 12-hour period, on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

**Average for 12 hours of Cheltenham, Maryland, geomagnetic K-figures on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

----Dashes indicate continuing storm.

###Storm began at 1700 GCT on March 30, 1952.

Table 80

Provisional Radio Propagation Quality Figures
(Including Comparisons with CRPL Warnings and Forecasts)
March 1952

Day	North Atlantic quality figure Half day GCT (1)	(2)	CRPL* Warning Half day GCT (1)	(2)	CRPL Forecasts (J-reports)	Geo-mag-netic K_{Ch} Half day GCT (1)	(2)
1	(3)	(4)	U	U	X	(4)	2
2	(4)	5				1	1
3	5	(4)		W		1	(5)
4	(2)	(3)	W	W		(5)	(4)
5	(2)	(3)	W	W	X	(5)	(5)
6	(2)	(2)	W	W	X	(6)	(4)
7	(3)	(2)	W	W	X	(4)	(4)
8	(2)	(2)	W	W	X	(4)	(4)
9	(3)	(3)	W	W	X	(4)	(4)
10	(3)	(3)	W	W	X	(4)	(4)
11	(4)	(3)	W	W	X	(4)	3
12	(4)	(3)	U		X	3	3
13	(4)	5				3	3
14	5	5				2	2
15	6	5				2	3
16	5	5				3	3
17	(3)	(4)				(4)	3
18	5	5				(4)	2
19	5	6				1	2
20	6	6				2	1
21	6	(4)		W		(4)	(5)
22	(3)	(3)	W	W	X	(4)	3
23	(3)	(3)	W	W	X	(5)	(4)
24	(2)	(3)	W	W	X	(5)	(4)
25	(3)	(3)	W	W	X	(4)	(4)
26	5	(4)	W	W	X	3	3
27	5	(4)	U	U	X	3	3
28	5	6	U			1	2
29	7	6				1	2
30	6	5				3	(5)
31	(2)	(3)	W	W	X	(6)	(4)

Score:	Warning N.A.	Forecast N.A.
H	34	30
(M)	1	0
M	5	8
G	21	22
O	1	2

*Broadcast on WWV, Washington, D.C. Times of warnings recorded to nearest half day as broadcast. ( ) broadcast for one-quarter day. Blanks signify N.

Scales:
Quality Figures
(1)- Useless
(2)- Very poor
(3)- Poor
(4)- Poor to fair
5 - Fair
6 - Fair to good
7 - Good
8 - Very good
9 - Excellent

Geomagnetic K_{Ch} - 0 to 9, 9 representing the greatest disturbance; $K_{Ch} \geq 4$ indicates significant disturbance, enclosed in ( ) for emphasis.

Symbols:
W Disturbed conditions expected
U Unstable conditions expected
N No disturbance expected
X Probable disturbed date

Scoring:
H Storm ($Q \leq 4$) hit
(M) Storm severer than predicted
M Storm missed
G Good day forecast
O Overwarning

Scoring by half day according to following table:

	Quality Figure ≤ 3	4	5	≥ 6
W	H	H	O	O
U	(M)	H	H	O
N	M	M	G	G
X	H	H	O	O

Table 81

Solar Flares, March 1952

Observatory	Date 1952	Time Observed		Duration (Min)	Area (Mill) (of) (Visible) (Hemisph)	Position		Time of Maximum (GCT)	Int. of Maximum	Relative Area of Maximum (Tenths)	Importance	SID Observed
		Beginning (GCT)	Ending (GCT)			Latitude (Deg)	Longitude Diff (Deg)					
Boulder	Mar.14	2101B	2130	-	70	S08	E02	2110	10	-	1 -	
"	27	1621	1630	9	60	S08	W13	1625	10	7	1 -	
"	27	2250B	2328Q	-	120	S08	W13	2315	15	3	1	

NOTE: Flare on March 14 was observed visually; position, area, and intensity were estimated.

B Flare started before given time
A Flare ended after given time
Q Time reported as questionable

ERRATUM: CRPL-F92, p.44, table 82--The second box heading should read, "Date 1952."

Table 82a

Coronal observations at Climax, Colorado (5303A), east limb

Date	Degrees north of the solar equator																	0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Apr. 1.7	-	-	-	-	3	6	9	10	10	10	8	9	9	10	18	21	17	33	10	3	2	2	2	3	3	3	3	4	3	2	-	-	-	-	-	-	-
4.8	-	-	-	-	-	-	2	3	3	4	4	3	3	3	3	3	3	3	4	6	16	11	12	10	5	3	3	5	4	3	3	-	-	-	-	-	-
5.7	-	-	-	-	-	-	-	2	3	3	3	2	-	-	3	3	3	4	10	12	20	18	15	12	6	5	3	3	3	3	3	-	-	-	-	-	-
7.8a	X	X	X	-	-	-	-	-	3	3	3	-	-	-	-	-	3	4	4	5	6	6	6	3	3	2	2	2	3	3	3	3	-	-	-	-	-
8.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	2	2	2	3	3	3	2	3	3	3	3	-	-	-	-	-	-	-
10.0a	-	-	-	-	-	-	X	X	X	4	4	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-
11.7a	-	-	-	-	-	-	3	3	3	3	2	2	2	3	3	2	2	2	3	3	3	4	3	3	3	3	3	2	2	2	-	-	-	-	-	-	-
14.8	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	3	3	5	7	12	7	7	4	3	3	3	3	3	3	-	-	-	-	-	-	-
15.8	-	-	-	-	-	-	-[a]	-[a]	-[a]	-[a]	-[a]	-[a]	-[a]	-[a]	-[a]	3[a]	3[a]	6[a]	12	15	21	18	16	10	6	6	5	5	5[a]	3[a]	3[a]	3[a]	-[a]	-[a]	-[a]	-[a]	-[a]
16.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	4	4	4	9	13	13	14	6	4	4	4	4	4	3	3	3	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	3	3	3	3	4	5	6	6	6	6	6	9	12	12	10	4	3	3	3	3	3	3	3	-	-	-	-	-
18.6	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	5	6	8	9	10	12	10	10	5	3	3	3	3	3	3	-	-	-	-	-	-	-
19.6	-	-	-	-	-	-	-	-	-	3	3	3	3	3	6	9	10	10	10	10	12	8	6	3	3	-	-	-	-	-	-	-	-	-	-	-	-
23.6	-	-	-	-	-	3	3	5	4	6	4	3	3	4	7	8	12	8	6	5	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.6	-	-	-	-	-	3	3	3	5	5	3	3	3	6	8	12	15	13	18	15	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
25.6	-	-	-	-	-	3	3	3	3	3	3	3	5	9	13	20	18	16	22	6	6	5	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
26.6	-	-	-	-	-	-	-	-	3	3	3	3	6	9	18	28	15	18	22	13	6	4	4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
27.6	-	-	-	-	-	3	3	3	4	4	4	4	6	12	25	22	18	18	28	15	13	5	4	4	4	4	4	4	3	3	-	-	-	-	-	-	-

Table 83a

Coronal observations at Climax, Colorado (6374A), east limb

Date	Degrees north of the solar equator																	0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Apr. 1.7	3	3	3	3	3	3	3	3	2	2	2	2	2	2	3	4	3	21	28	8	6	4	4	4	3	3	3	3	3	3	3	3	2	3	4	3	3
4.8	3	3	3	3	3	3	3	2	2	2	3	4	5	5	4	4	4	4	4	2	4	2	2	3	3	3	3	3	3	3	3	3	4	3	4	4	5
5.7	3	3	3	3	3	3	2	2	3	3	3	4	4	3	4	3	4	4	3	5	3	3	3	3	2	2	3	3	3	3	5	3	3	3	3	3	3
7.8a	X	X	X	2	2	2	2	2	2	3	3	3	4	6	4	6	12	4	2	2	2	3	3	3	3	2	2	2	2	2	3	3	2	3	3	3	3
8.8a	2	2	2	2	2	2	2	-	-	2	2	2	3	3	2	3	3	2	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2
10.0a	3	3	3	3	3	3	X	X	X	X	3	3	3	4	5	3	3	3	2	2	3	3	3	3	3	4	3	2	2	2	2	2	2	3	3	3	3
11.7a	3	3	3	3	3	2	2	-	-	-	-	-	-	-	-	2	2	2	4	3	3	3	2	2	2	2	2	4	3	3	3	2	2	2	3	3	4
14.8	X	X	X	X	2	2	2	2	2	2	2	3	3	4	4	4	4	4	2	3	18	4	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3
15.8	3	3	3	4	3	3	2[a]	2[a]	2[a]	2[a]	2[a]	3[a]	5[a]	4[a]	4[a]	4[a]	3[a]	3[a]	3	3	12	3	4	3	2	2	2	2	2[a]	2[a]	3[a]	2[a]	2[a]	3[a]	3[a]	2[a]	2[a]
16.6	3	4	3	3	3	3	3	3	3	3	4	4	3	3	3	3	2	3	3	6	4	6	3	2	2	2	3	3	3	2	2	3	3	3	3	3	3
17.7	3	3	3	3	5	3	3	3	3	5	5	4	3	2	3	3	3	2	3	4	4	4	4	3	2	3	2	2	2	3	3	3	3	3	4	3	3
18.6	3	3	3	3	3	3	3	3	3	4	4	3	3	3	3	3	3	3	3	10	9	6	3	3	3	3	3	4	4	4	3	3	3	3	3	3	3
19.6	4	4	4	4	4	4	2	2	2	2	2	2	2	5	3	6	2	6	9	15	5	2	2	2	3	4	3	4	4	4	3	3	3	3	3	3	3
23.6	4	4	4	5	4	4	2	-	-	-	-	2	3	3	3	4	11	5	6	4	4	4	5	4	3	3	4	4	3	3	3	4	3	3	3	5	4
24.6	4	4	5	5	3	3	3	3	3	3	3	3	3	3	3	9	3	6	13	7	9	3	3	4	5	3	3	3	3	3	3	3	3	3	3	3	4
25.6	3	3	4	4	4	3	-	-	-	-	-	-	-	3	6	3	2	12	3	3	2	2	2	2	3	3	2	2	2	2	2	2	2	2	2	2	3
26.6	3	3	3	4	4	3	2	2	2	2	2	2	2	3	6	6	3	6	3	3	3	3	3	3	2	2	2	2	2	2	3	3	2	2	2	3	2
27.6	3	3	4	4	3	3	2	2	2	2	2	2	2	3	6	3	2	2	13	4	3	3	5	3	3	2	2	3	3	2	2	2	2	3	3	3	3

Table 84a

Coronal observations at Climax, Colorado (6702A), east limb

Date	Degrees north of the solar equator																	0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Apr. 1.7	-	-	-	-	-	-	-	-	-	-	2	2	2	2	3	4	4	5	3	3	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
4.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-
5.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	3	3	2	2	2	2	2	-	-	-	-	-	-	-	-
7.8a	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-
8.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-
10.0a	-	-	-	-	-	-	X	X	X	X	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-
11.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-
14.8	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	3	3	3	3	3	3	3	3	2	-	-	-	-	-	-	-	-
15.8	-	-	-	-	-	-	-[a]	-[a]	-[a]	-[a]	-[a]	-[a]	-[a]	-[a]	2[a]	2[a]	2[a]	2[a]	3	4	5	3	3	3	3	2	2	2	-[a]	-[a]	-[a]	-[a]	-[a]	-[a]	-[a]	-[a]	-[a]
16.6	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	3	3	3	2	2	2	2	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-
18.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-
19.6	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	3	3	3	3	3	3	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-
23.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-
24.6	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	3	3	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.6	-	-	-	-	-	-	-	-	-	2	2	2	2	2	3	3	4	4	3	3	3	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-
26.6	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	4	4	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.6	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	4	4	4	3	3	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-

Table 82b

Coronal observations at Climax, Colorado (5303A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Apr. 1.7	-	-	-	-	-	2	3	3	3	4	4	5	6	9	10	12	18	29	18	13	10	5	4	4	3	3	4	4	3	3	-	-	-	-	-	-	-
4.8	-	-	-	3	4	4	3	3	3	4	4	3	4	5	6	9	12	11	13	12	10	7	8	5	4	5	4	4	4	4	3	3	3	3	3	-	-
5.7	-	-	-	-	-	-	-	-	-	3	3	3	4	9	13	18	15	18	35	21	18	15	8	4	3	3	5	6	5	4	3	3	-	-	-	-	-
7.8a	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	-	-	-
10.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	6	8	12	10	8	6	4	4	4	6	5	4	3	2	-	-	-	-
11.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	9	12	21	26	23	22	21	17	12	8	6	6	7	7	6	3	-	-	-	-	-
14.8	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	9	12	15	18	23	18	15	17	9	5	4	4	5	5	4	3	X	X	X	X	X	X
15.8	-[a]	-[a]	-[a]	-[a]	-[a]	-	-	3	4	4	3	3	3	6	8	9	9	12	16	18	16	16	16	9	7	6	5	6	6	4	3	-	-	-	-	-	-
16.6	-	-	-	-	-	-	3	5	6	6	5	5	5	5	6	9	10	12	13	16	14	11	13	8	6	4	4	6	6	5	4	-	-	-	-	-	-
17.7	-	-	-	-	-	-	3	3	3	4	4	3	3	5	6	6	8	10	8	6	5	4	4	6	4	3	4	5	3	3	3	-	-	-	-	-	-
18.6	-	-	-	-	4	4	4	4	4	4	4	5	6	8	10	11	13	9	8	5	6	4	3	3	3	3	4	4	3	-	-	-	-	-	-	-	-
19.6	-	-	-	2	2	3	3	3	3	3	3	6	8	9	16	15	16	9	8	8	10	6	4	3	4	4	3	4	3	3	3	3	-	-	-	-	-
23.6	-	-	-	-	3	3	3	6	3	3	5	3	4	5	6	6	8	12	6	5	5	4	6	5	5	5	7	6	5	4	3	3	-	-	-	-	-
24.6	-	-	-	3	3	3	3	3	3	3	4	3	3	3	6	13	16	18	21	5	4	4	5	5	5	4	6	5	4	4	3	-	-	-	-	-	-
25.6	-	-	-	3	3	3	3	3	4	4	3	3	3	6	9	15	18	19	15	6	9	6	4	4	4	4	4	4	3	4	3	-	-	-	-	-	-
26.6	-	-	-	-	-	3	3	3	3	3	3	3	5	9	12	16	15	18	10	9	15	7	4	3	3	3	4	6	4	4	-	-	-	-	-	-	-
27.6	-	-	-	-	-	3	3	4	4	4	4	3	8	12	13	12	12	13	11	12	18	6	4	3	3	3	3	3	3	3	3	-	-	-	-	-	-

Table 83b

Coronal observations at Climax, Colorado (6374A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Apr. 1.7	3	3	3	2	2	2	-	-	-	2	2	-	-	-	-	2	4	18	3	5	14	10	6	5	3	3	2	2	3	3	3	3	3	3	3	3	3
4.8	5	3	4	4	3	3	2	2	2	2	2	2	2	5	6	4	3	4	17	15	3	3	3	3	4	3	3	5	2	2	2	2	2	3	4	3	3
5.7	3	3	3	3	3	3	2	2	2	2	3	3	3	5	6	2	2	6	21	3	6	5	5	5	3	4	4	3	2	2	2	2	2	2	3	3	3
7.8a	3	3	3	3	3	3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8.8a	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	5	7	7	6	3	3	2	3	3	2	2	2	2	2	2	2	2	2	2	2	2
10.0	3	4	4	3	3	3	3	3	3	4	3	3	4	4	5	8	3	3	4	4	4	3	3	3	3	3	3	3	-	-	-	-	3	3	3	3	3
11.7	4	4	4	4	3	4	2	2	2	2	2	3	3	3	5	4	4	3	9	19	2	2	6	2	2	2	2	2	2	2	2	2	3	3	3	3	3
14.8	3	3	3	3	3	3	X	X	X	X	X	X	X	X	X	6	5	4	5	4	7	3	3	2	2	2	2	2	3	3	3	X	X	X	X	X	X
15.8	2[a]	2[a]	3[a]	3[a]	3[a]	3	3	3	3	3	4	4	4	4	4	3	3	4	9	12	-	-	-	-	-	-	-	2	2	2	2	2	3	3	3	3	3
16.6	3	3	3	4	3	3	3	3	3	3	3	4	3	4	3	3	3	6	4	8	6	3	3	4	4	3	3	3	3	2	2	2	3	3	4	4	3
17.7	3	3	3	3	3	3	4	5	5	4	4	4	4	3	3	3	3	4	3	3	5	4	5	4	4	4	4	3	2	2	2	2	2	3	3	3	3
18.6	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	3	2	5	6	6	4	4	3	3	2	2	2	2	2	2	3	3	3	3
19.6	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	5	3	9	7	6	7	4	2	2	3	3	3	3	3	4	4	4
23.6	4	4	4	4	3	3	3	3	3	3	3	5	7	5	3	3	2	3	4	3	3	3	3	3	3	3	2	2	2	3	2	3	3	2	3	5	4
24.6	4	3	3	3	3	3	3	3	3	3	3	4	5	5	6	7	5	12	14	5	5	3	3	2	4	4	3	3	2	3	3	3	3	4	4	4	4
25.6	3	3	3	3	3	3	3	-	3	3	4	5	5	4	5	14	5	12	5	6	8	4	3	2	3	3	2	2	2	2	2	2	2	2	2	3	3
26.6	2	3	3	3	4	3	3	3	2	3	3	4	3	3	3	6	3	8	4	3	16	4	5	3	3	3	2	2	2	2	2	2	2	2	2	3	3
27.6	3	3	3	3	4	3	3	3	3	3	3	3	3	3	3	3	5	4	5	4	15	6	3	4	5	4	5	3	3	3	3	3	3	3	3	4	3

Table 84b

Coronal observations at Climax, Colorado (6702A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Apr 1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	4	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-
4.8	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-
5.7	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	4	5	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.8a	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8.8a	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	3	3	3	3	2	2	-	-	-	-	-	-
11.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	4	4	3	3	2	2	2	2	2	2	2	-	-	-	-	-	-	-
14.8	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	2	2	2	3	4	4	3	3	2	2	2	2	2	-	-	-	X	X	X	X	X	X
15.8	-[a]	-[a]	-[a]	-[a]	-[a]	-	-	-	-	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	-	-	-	-	-	-	-	-
16.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	3	3	3	3	2	2	2	2	2	2	2	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	3	3	3	3	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-
18.6	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
19.6	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	3	3	3	2	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.6	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-
24.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.6	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	4	4	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.6	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 85a

Coronal observations at Sacramento Peak, New Mexico (5303A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Apr. 1.8	2	2	2	2	2	3	3	4	5	6	6	5	5	6	10	14	12	20	20	12	3	2	2	2	2	3	3	3	3	2	2	2	2	2	-	2	2
2.8	2	2	2	2	3	3	3	3	4	4	3	5	7	7	6	14	12	11	14	5	4	4	3	2	2	2	2	2	2	2	2	2	2	2	2	3	3
3.7	3	3	3	2	2	2	2	2	5	5	4	5	5	5	8	6	5	3	5	5	6	7	5	6	5	5	4	2	2	5	4	2	2	2	2	-	-
7.7a	2	2	2	2	2	2	2	2	3	3	3	3	3	4	4	3	3	5	5	4	4	4	5	5	6	5	4	4	5	4	3	3	3	2	2	2	2
9.7	-	-	-	-	-	-	-	3	8	5	7	7	7	6	5	5	5	6	6	8	7	7	8	7	6	5	4	4	4	4	5	5	4	3	3	2	2
13.9a	2	2	2	2	2	2	3	3	2	3	3	3	3	3	3	3	2	2	2	2	2	3	4	4	5	6	6	5	5	4	4	3	2	3	2	3	3
14.7	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	4	3	3	5	8	5	5	5	4	3	3	3	3	3	3	2	2	3	3	3
15.8	3	2	2	2	2	2	2	2	3	3	4	3	3	3	4	4	4	4	5	8	14	16	14	11	9	5	5	4	3	4	5	4	2	2	2	2	2
18.8	-	-	2	2	2	2	3	3	2	3	2	3	4	4	5	8	11	11	14	15	15	18	16	14	11	5	4	4	3	4	6	4	3	2	2	2	-
26.9a	3	3	3	3	3	4	4	5	8	4	4	5	5	6	20	23	19	16	23	22	15	12	8	5	3	4	5	4	3	2	2	3	4	3	3	4	2
29.7a	2	3	3	3	3	3	5	7	11	15	10	8	11	20	30	39	32	41	34	20	16	11	13	8	8	8	6	8	9	10	5	5	5	4	4	2	2
30.9a	3	4	4	4	3	3	3	5	8	6	7	7	11	12	14	22	26	28	27	16	11	8	8	8	9	10	8	6	5	6	6	6	6	6	8	4	4

Table 86a

Coronal observations at Sacramento Peak, New Mexico (6374A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Apr. 1.8	2	2	2	2	2	2	-	2	2	-	-	2	2	2	2	3	3	9	10	5	3	3	4	3	2	5	3	2	2	2	2	2	-	-	-	3	2
2.8	2	3	3	3	3	2	2	2	2	2	2	2	2	3	2	3	3	14	12	5	4	3	2	3	3	3	3	2	-	-	3	2	2	2	-	2	2
3.7	-	2	2	2	2	2	2	2	-	-	-	2	3	3	3	3	3	3	3	2	3	2	2	2	2	2	2	-	3	3	2	2	2	-	3	3	2
7.7a	2	2	2	3	3	3	2	2	2	2	2	3	2	3	3	4	4	5	4	2	2	2	2	2	3	3	2	2	2	2	2	2	2	2	2	2	2
9.7	3	2	4	3	2	3	2	2	2	-	-	2	3	4	4	4	4	3	4	2	3	3	2	2	2	2	5	5	4	3	2	2	2	2	2	2	4
13.9a	3	2	2	2	2	2	-	-	2	2	2	2	3	2	2	2	2	2	2	2	3	3	4	2	2	2	2	3	2	2	2	2	2	2	3	2	2
14.7	2	3	3	3	3	2	2	2	2	2	3	4	4	5	5	5	5	5	5	4	13	11	3	2	2	2	2	2	-	-	-	3	2	2	2	3	3
15.8	2	2	3	2	-	-	2	-	-	-	-	2	2	3	3	3	3	2	2	2	2	3	3	-	-	-	-	-	-	-	-	2	-	-	2	2	-
18.8	2	3	3	3	4	3	2	2	2	5	5	3	3	3	4	4	4	3	3	10	14	7	4	3	2	4	4	4	4	4	3	3	4	3	3	2	2
26.9a	3	2	3	2	2	2	2	3	3	2	-	-	2	-	2	3	2	2	4	3	3	3	3	2	2	2	2	2	2	2	-	2	2	2	2	2	2
29.7a	5	5	5	7	4	4	3	2	3	3	2	4	3	2	3	3	5	5	14	15	6	3	3	4	4	4	3	2	5	5	5	5	3	5	4	4	5
30.9a	6	5	7	7	5	4	3	3	4	4	2	3	8	9	10	7	11	16	13	13	8	5	3	4	3	2	2	2	3	4	4	3	3	3	4	4	5

Table 87a

Coronal observations at Sacramento Peak, New Mexico (6702A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Apr. 1.8	-	-	-	-	-	-	-	-	2	2	2	2	2	2	3	2	2	4	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.8	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.7	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
14.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
15.8	-	-	-	-	-	-	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
26.9a	-	-	-	-	-	-	-	-	2	2	2	2	2	3	3	4	4	4	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.7a	-	-	-	-	-	-	-	-	-	-	2	2	3	2	3	4	5	5	5	4	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	3
30.9a	-	-	-	-	-	-	-	-	-	-	-	-	2	4	3	4	4	5	5	4	4	4	4	3	3	3	-	-	-	-	-	-	-	-	-	-	-

Table 85b

Coronal observations at Sacramento Peak, New Mexico (5303A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Apr. 1.8	2	2	2	2	2	2	3	3	3	4	2	5	5	6	8	8	13	18	16	10	11	10	4	3	3	3	3	2	2	2	2	2	2	–	–	2	2
2.8	3	3	2	2	2	2	3	3	4	3	4	4	4	5	6	6	14	16	18	14	8	8	5	5	5	4	3	3	3	4	4	3	3	3	3	2	2
3.7	–	–	–	–	–	2	3	4	4	4	3	4	4	5	5	5	9	11	10	8	5	4	5	5	3	3	3	3	3	3	3	3	2	2	2	3	3
7.7a	2	2	2	2	2	3	3	3	2	2	2	3	3	3	3	4	4	5	10	10	4	4	4	3	3	4	4	3	4	5	4	4	4	4	4	3	2
9.7a	2	2	2	2	2	2	2	3	–	–	–	2	2	2	2	3	3	3	3	4	6	6	5	X	X	X	X	X	X	X	X	X	X	X	X	2	–
13.9	3	3	2	2	2	–	–	–	2	2	2	2	3	3	2	3	5	12	12	14	14	13	14	14	13	10	6	4	3	5	4	4	3	3	2	3	2
14.7	3	2	2	2	2	2	2	2	2	2	2	3	3	3	4	4	5	8	9	14	14	12	13	13	11	4	3	4	5	6	4	2	2	2	3	3	2
15.8	2	2	2	2	2	2	3	3	3	4	4	5	5	5	5	4	5	5	6	11	12	12	11	10	5	5	4	5	5	4	3	3	3	3	2	3	3
18.8	–	–	–	2	2	3	3	3	4	5	4	3	8	8	9	10	12	13	7	6	9	6	5	3	3	4	5	5	4	4	2	3	2	–	–	–	–
26.9a	2	2	3	3	3	5	6	5	5	3	3	3	3	3	4	5	8	11	12	8	12	13	7	5	3	3	4	4	4	4	4	3	4	3	2	3	3
29.7a	2	–	–	–	2	8	10	11	8	7	8	7	5	6	11	16	20	22	18	11	11	6	6	5	5	3	3	3	3	3	4	3	2	2	2	2	2
30.9a	4	5	5	4	4	5	5	6	8	6	6	6	7	7	8	9	11	14	15	15	12	11	10	8	8	7	6	5	5	5	5	4	5	6	5	3	3

Table 86b

Coronal observations at Sacramento Peak, New Mexico (6374A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Apr. 1.8	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	–	2	14	16	3	11	11	7	5	5	2	3	2	–	–	–	–	–	–	–	2	2
2.8	2	2	2	–	3	2	–	–	2	2	3	4	2	3	2	2	13	16	13	12	5	8	7	7	6	6	2	5	4	3	2	2	3	2	2	3	2
3.7	2	2	2	–	2	2	2	2	2	2	2	2	2	–	3	3	10	5	12	8	4	3	2	2	2	2	2	3	3	2	2	2	–	–	–	–	–
7.7a	2	2	3	2	3	2	2	2	2	3	2	2	2	2	2	2	3	3	5	9	5	2	5	4	3	2	2	2	2	2	2	2	2	2	2	2	2
9.7a	4	3	3	4	4	3	3	3	2	2	2	4	4	5	4	5	5	4	4	5	4	3	2	2	X	X	X	X	X	X	X	X	X	X	X	3	3
13.9	2	–	–	2	2	2	2	2	–	–	2	3	3	2	3	2	8	6	5	8	6	5	5	3	2	2	–	–	2	2	2	2	2	2	2	3	3
14.7	3	2	2	3	2	2	2	2	3	2	3	3	5	5	5	4	5	3	2	3	3	4	2	–	–	–	2	–	–	–	–	–	–	2	2	2	2
15.8	–	2	2	2	3	2	2	–	–	–	2	–	3	2	–	–	3	3	–	6	8	5	–	–	–	–	–	–	–	–	–	–	–	–	–	3	2
18.8	2	–	–	3	–	2	2	2	3	3	3	3	3	3	3	3	2	2	2	2	8	7	6	6	4	3	3	–	–	2	–	2	2	3	4	4	2
26.9a	2	3	3	3	3	2	2	4	4	2	2	2	2	X	X	X	X	X	4	3	8	13	4	4	2	2	2	2	–	2	2	2	3	2	3	3	3
29.7a	4	5	3	4	3	3	2	2	2	2	3	3	X	X	X	2	3	2	3	4	3	5	5	4	5	8	10	7	4	3	4	3	4	2	3	4	5
30.9a	5	5	5	6	4	4	3	3	3	3	3	3	X	X	X	3	3	4	3	3	4	4	3	2	2	4	5	8	6	5	5	3	3	5	5	5	6

Table 87b

Coronal observations at Sacramento Peak, New Mexico (6702A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Apr. 1.8	–	–	–	–	–	–	–	–	2	2	2	–	–	–	–	–	2	2	2	2	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2.8	–	–	–	–	–	–	–	–	2	2	2	2	2	2	2	2	3	3	3	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
3.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
7.7a	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	2	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
9.7a	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X	X	X	X	X	X	X	X	X	X	X	X	–	–
13.9	–	–	–	–	–	–	–	–	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	3	3	2	2	2	–	–	–	–	–	–	–	–	–
14.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	3	4	3	3	3	3	2	2	–	–	–	–	–	–	–	–	–	–	–
15.8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	3	3	3	3	2	2	2	–	–	–	–	–	–	–	–	–	–	–
18.8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	2	2	2	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
26.9a	–	–	–	–	–	–	–	–	–	–	–	–	–	X	X	X	X	X	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
29.7a	3	–	–	–	–	–	2	2	2	–	–	–	X	X	X	–	2	2	2	2	2	2	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–
30.9a	–	–	–	–	–	–	–	–	–	–	–	–	X	X	X	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Table 88

Zürich Provisional Relative Sunspot Numbers

April 1952

Date	R_Z*	Date	R_Z*
1	28	17	7
2	16	18	17
3	21	19	33
4	26	20	53
5	37	21	62
6	33	22	50
7	37	23	38
8	40	24	26
9	32	25	15
10	30	26	26
11	46	27	16
12	28	28	17
13	22	29	32
14	19	30	42
15	7		
16	8	Mean:	28.8

* Dependent on observations at Zürich Observatory and its stations at Locarno and Arosa.

Table 89

American Relative Sunspot Numbers

March 1952

Date	R_A,*	Date	R_A,*
1	0	17	16
2	0	18	14
3	0	19	11
4	0	20	0
5	8	21	0
6	11	22	0
7	14	23	0
8	13	24	10
9	14	25	31
10	31	26	35
11	30	27	56
12	34	28	85
13	30	29	80
14	25	30	85
15	26	31	44
16	20	Mean:	23.3

*Combination of reports from 28 observers; see page 10.

Table 90

Indices of Geomagnetic Activity for March 1952

Preliminary values of international Character-figures, C;
Geomagnetic planetary three-hour-range indices, Kp;
Magnetically selected quiet and disturbed days

Gr. Day 1952	C	Values Kp three-hour interval 1	2	3	4	5	6	7	8	Sum	Final Selected Days
1	0.8	4-	4-	3+	3+	4-	3+	1+	1-	23o	Five
2	0.1	1o	3-	1-	2-	1+	1-	1-	1-	10-	Quiet
3	1.5	0+	1o	2+	2-	6-	5-	6+	7-	29-	
4	1.6	6-	6+	6o	6+	5o	5+	6-	5+	46-	2
5	1.7	6o	7-	5+	6+	6o	6+	6o	7+	50o	14
											19
6	1.6	8o	7+	6+	5-	4+	4o	5o	5+	45o	20
7	1.5	4-	5o	3+	6+	5+	6-	5o	7-	41o	28
8	1.5	6-	5o	4+	5-	5-	6-	6o	5+	41+	
9	1.5	6o	4o	5-	5o	4+	5+	5o	6o	40+	
10	1.4	4+	4+	5-	4-	4+	6-	5o	5+	37+	
11	1.2	5+	4o	4-	4-	4o	4+	5+	4-	34o	Five
12	1.0	4+	3+	3-	3o	4o	3+	4o	3o	28-	Disturbed
13	0.7	3-	2+	3o	2o	3+	2o	2+	3+	21o	
14	0.2	2o	2+	1o	3o	2+	1+	1-	2+	15o	4
15	1.0	2o	3o	3o	2o	3o	3-	4o	4+	24o	5
											6
16	1.0	2o	3+	4+	4o	3o	4-	4-	4o	28o	7
17	1.1	4-	5-	4o	4-	5-	4+	3o	3o	31o	31
18	0.6	2+	3+	3+	3-	2+	4-	1o	2o	21-	
19	0.4	2o	1o	2-	1o	2-	2+	3-	2o	14+	
20	0.0	0+	1+	2-	2+	1-	0+	1o	1o	9-	
21	1.3	3-	4-	5-	5-	6-	5-	4-	6-	35+	Ten
22	1.2	5-	5o	4o	3+	2+	3o	4+	6-	32+	Quiet
23	1.5	7o	4+	5o	4+	3+	4o	6-	4o	38-	
24	1.4	5o	6-	5o	5+	5o	5o	5-	4+	40o	1
25	1.0	2+	3+	5-	4+	5-	4-	4o	3+	30+	2
											13
26	0.8	5-	3o	1+	2-	3o	3-	4o	3-	23o	14
27	0.9	2o	4o	4-	3+	3+	4+	3-	3-	26o	18
28	0.1	2-	2o	1o	1-	1+	1-	1+	1o	10-	19
29	0.4	1-	1o	1o	3-	3-	1+	2o	3o	14+	20
30	1.4	3+	4-	2o	2o	4+	6o	6o	7-	34o	26
31	1.6	8-	6o	7-	5+	4o	6o	5+	5o	46o	28
											29
Mean	1.03										

Table 89

American Relative Sunspot Numbers

March 1952

Date	R_A ,*	Date	R_A ,*
1	0	17	16
2	0	18	14
3	0	19	11
4	0	20	0
5	8	21	0
6	11	22	0
7	14	23	0
8	13	24	10
9	14	25	31
10	31	26	35
11	30	27	56
12	34	28	85
13	30	29	80
14	25	30	85
15	26	31	44
16	20	Mean:	23.3

*Combination of reports from 28 observers; see page 10.

Table 90

Indices of Geomagnetic Activity for March 1952

Preliminary values of international Character-figures, C;
Geomagnetic planetary three-hour-range indices, Kp;
Magnetically selected quiet and disturbed days

Gr. Day 1952	C	Values Kp three-hour interval 1	2	3	4	5	6	7	8	Sum	Final Selected Days
1	0.8	4-	4-	3+	3+	4-	3+	1+	1-	23o	Five
2	0.1	1o	3-	1-	2-	1+	1-	1-	1-	10-	Quiet
3	1.5	0+	1o	2+	2-	6-	5-	6+	7-	29-	
4	1.6	6-	6+	6o	6+	5o	5+	6-	5+	46-	2
5	1.7	6o	7-	5+	6+	6o	6+	6o	7+	50o	14 19
6	1.6	8o	7+	6+	5-	4+	4o	5o	5+	45o	20
7	1.5	4-	5o	3+	6+	5+	6-	5o	7-	41o	28
8	1.5	6-	5o	4+	5-	5-	6-	6o	5+	41+	
9	1.5	6o	4o	5-	5o	4+	5+	5o	6o	40+	
10	1.4	4+	4+	5-	4-	4+	6-	5o	5+	37+	
11	1.2	5+	4o	4-	4-	4o	4+	5+	4-	34o	Five
12	1.0	4+	3+	3-	3o	4o	3+	4o	3o	28-	Disturbed
13	0.7	3-	2+	3o	2o	3+	2o	2+	3+	21o	
14	0.2	2o	2+	1o	3o	2+	1+	1-	2+	15o	4
15	1.0	2o	3o	3o	2o	3o	3-	4o	4+	24o	5 6
16	1.0	2o	3+	4+	4o	3o	4-	4-	4o	28o	7
17	1.1	4-	5-	4o	4-	5-	4+	3o	3o	31o	31
18	0.6	2+	3+	3+	3-	2+	4-	1o	2o	21-	
19	0.4	2o	1o	2-	1o	2-	2+	3-	2o	14+	
20	0.0	0+	1+	2-	2+	1-	0+	1o	1o	9-	
21	1.3	3-	4-	5-	5-	6-	5-	4-	6-	35+	Ten
22	1.2	5-	5o	4o	3+	2+	3o	4+	6-	32+	Quiet
23	1.5	7o	4+	5o	4+	3+	4o	6-	4o	38-	
24	1.4	5o	6-	5o	5+	5o	5o	5-	4+	40o	1
25	1.0	2+	3+	5-	4+	5-	4-	4o	3+	30+	2 13
26	0.8	5-	3o	1+	2-	3o	3-	4o	3-	23o	14
27	0.9	2o	4o	4-	3+	3+	4+	3-	3-	26o	18
28	0.1	2-	2o	1o	1-	1+	1-	1+	1o	10-	19
29	0.4	1-	1o	1o	3-	3-	1+	2o	3o	14+	20
30	1.4	3+	4-	2o	2o	4+	6o	6o	7-	34o	26
31	1.6	8-	6o	7-	5+	4o	6o	5+	5o	46o	28 29
Mean	1.03										

Table 91

Sudden Ionosphere Disturbances Observed at Washington, D. C.

April 1952

1952 Day	GCT Beginning	GCT End	Location of transmitters	Relative intensity at minimum*	Other phenomena
April 4	2225	2310	Mexico	0.2	Terr.mag.pulse** 2215-2235 Solar flare*** 2218

*Ratio of received field intensity during SID to average field intensity before and after, for station XEWW, 9500 kilocycles, 3000 kilometers distant.

**As observed on Cheltenham magnetogram of the United States Coast and Geodetic Survey.

***Time of observation at High Altitude Observatory, Boulder, Colorado.

Note: Observers are invited to send to the CRPL information on times of beginning and end of sudden ionosphere disturbances for publication as above. Address letters to the Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

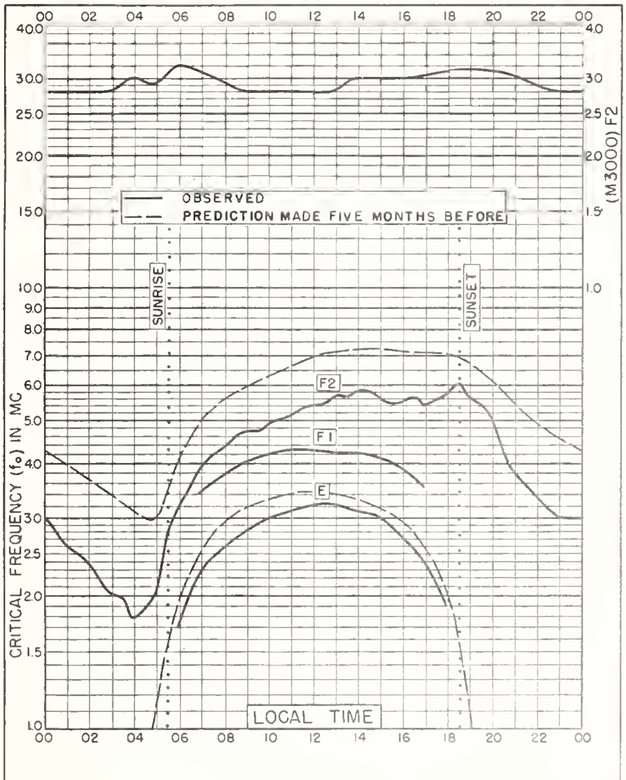


Fig. I. WASHINGTON, D. C. 38.7°N, 77.1°W APRIL 1952

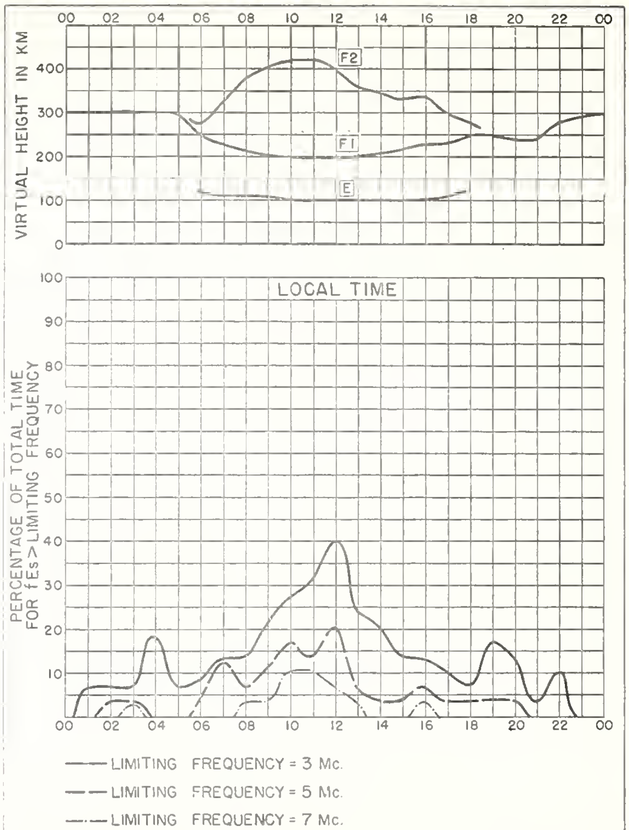


Fig. 2. WASHINGTON, D. C. APRIL 1952

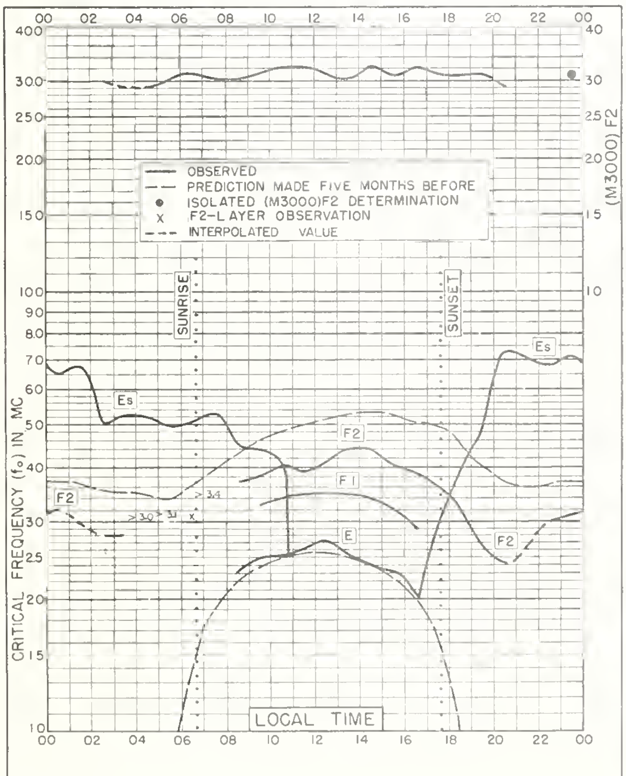


Fig 3. POINT BARROW, ALASKA 71.3°N, 156.8°W MARCH 1952

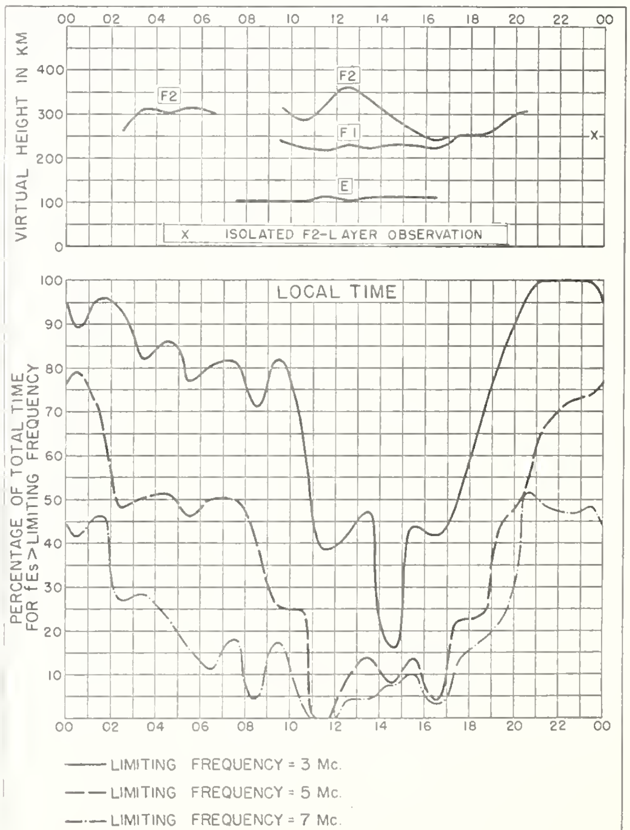


Fig. 4. POINT BARROW, ALASKA MARCH 1952

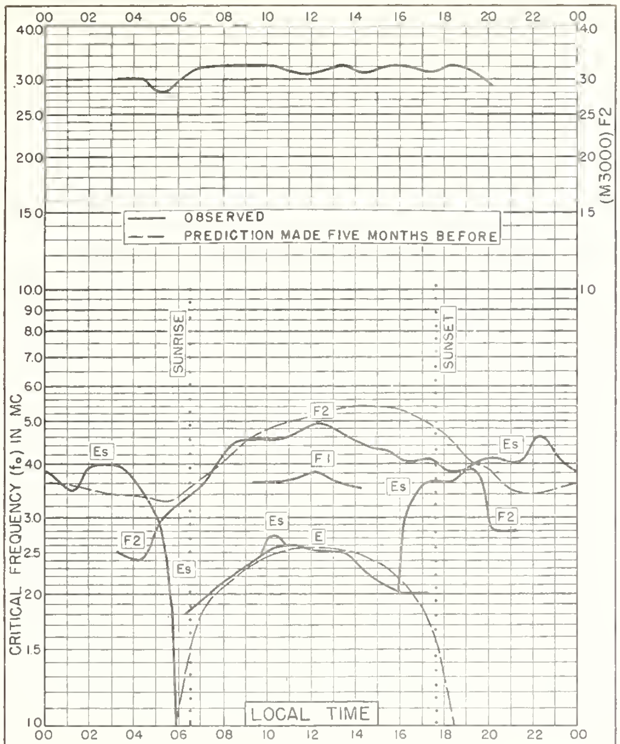


Fig 5. TROMSO, NORWAY
69.7°N, 19.0°E MARCH 1952

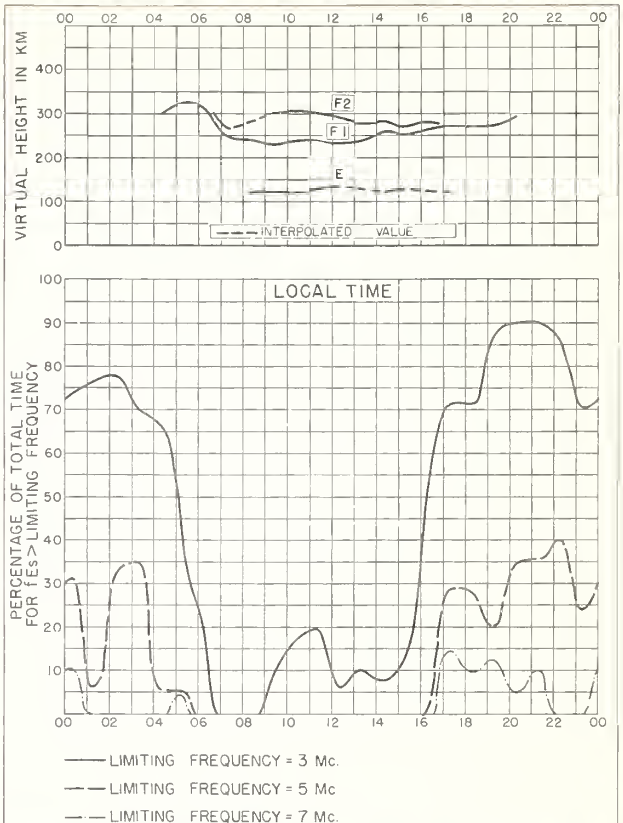


Fig. 6. TROMSO, NORWAY MARCH 1952

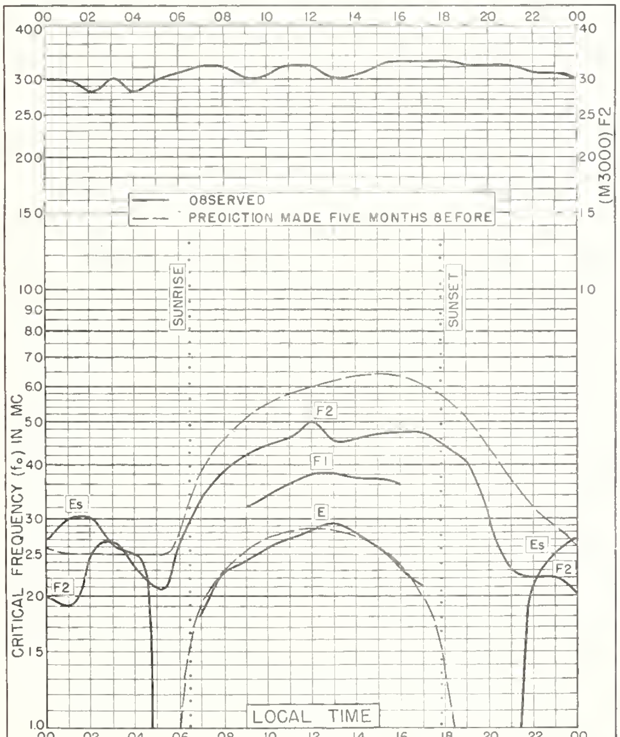


Fig. 7. ANCHORAGE, ALASKA
61. 2°N, 149.9°W MARCH 1952

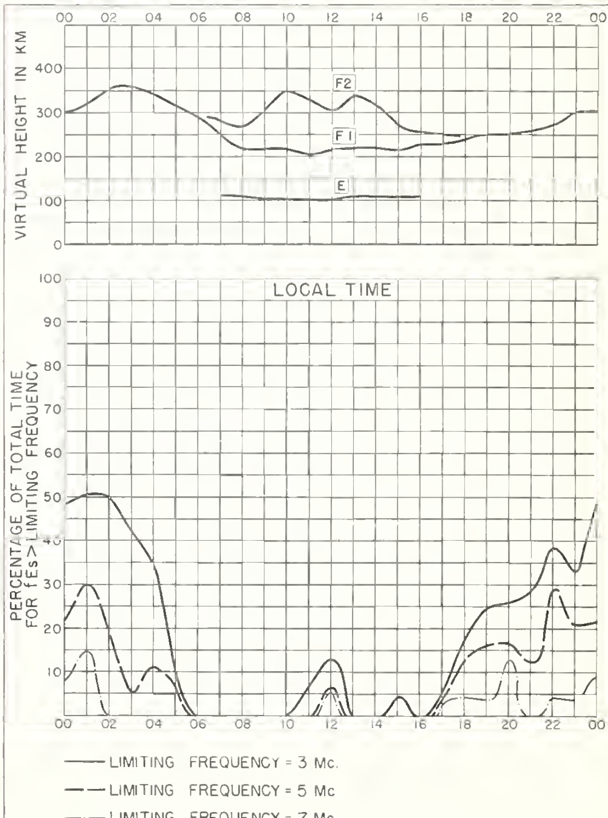


Fig. 8. ANCHORAGE, ALASKA MARCH 1952

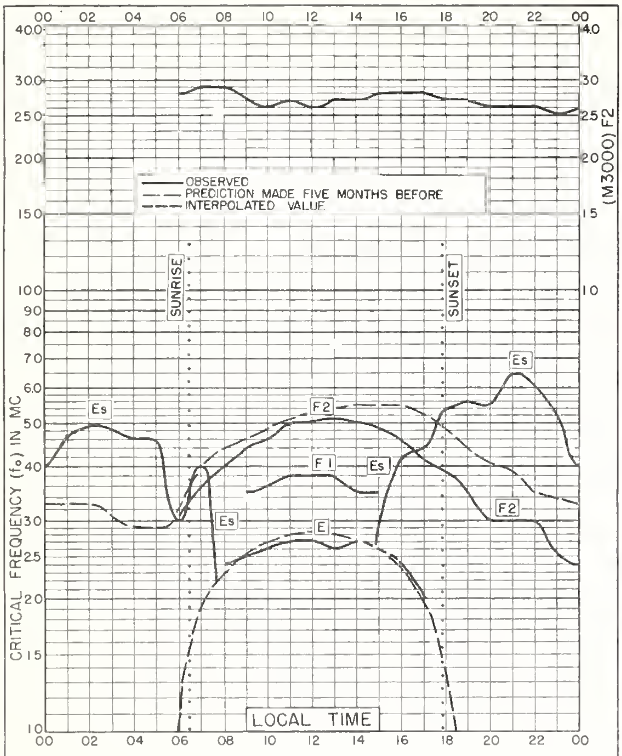


Fig. 9. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W MARCH 1952

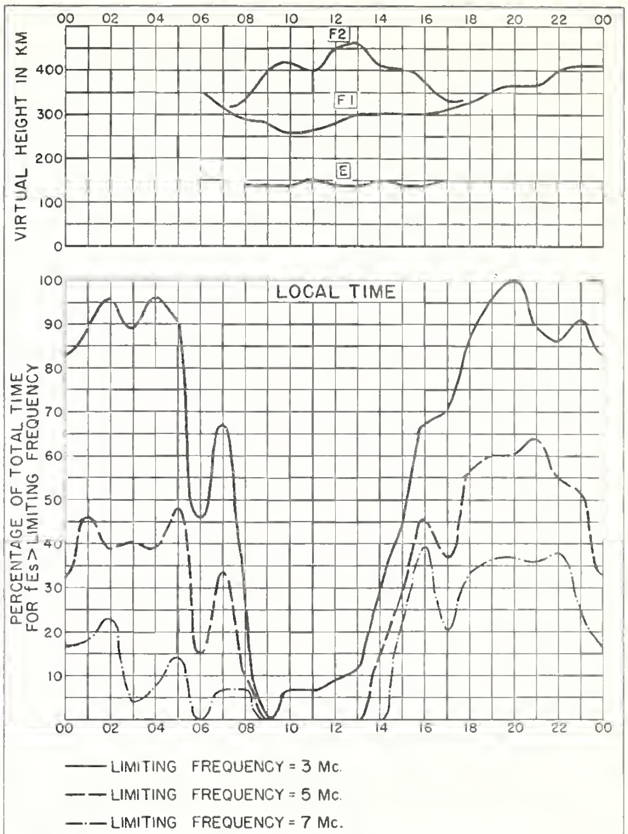


Fig. 10. NARSARSSUAK, GREENLAND MARCH 1952

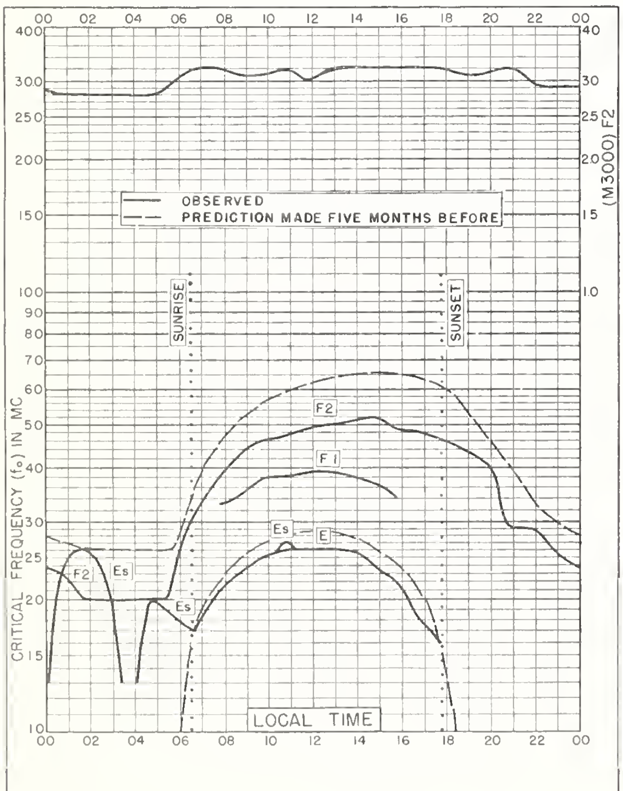


Fig. 11. OSLO, NORWAY
60.0°N, 11.1°E MARCH 1952

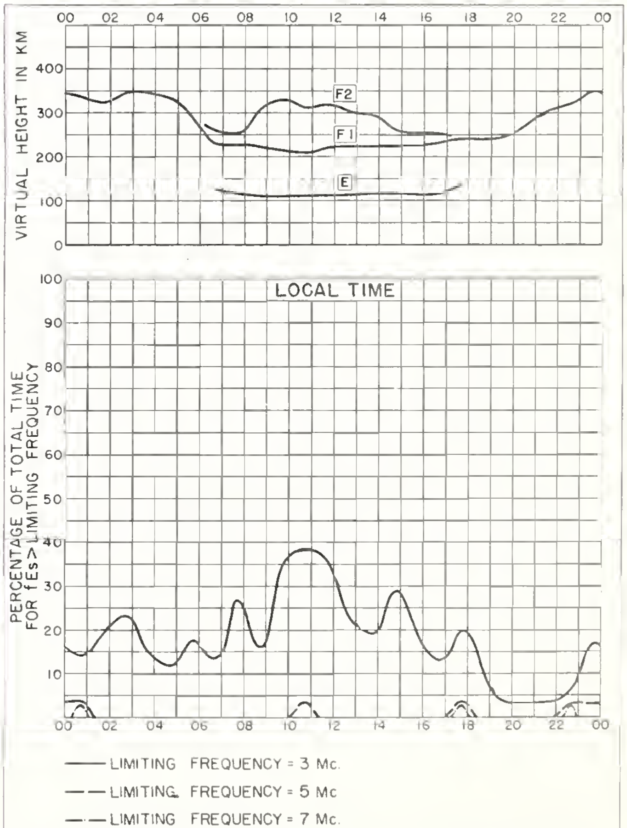


Fig. 12. OSLO, NORWAY MARCH 1952

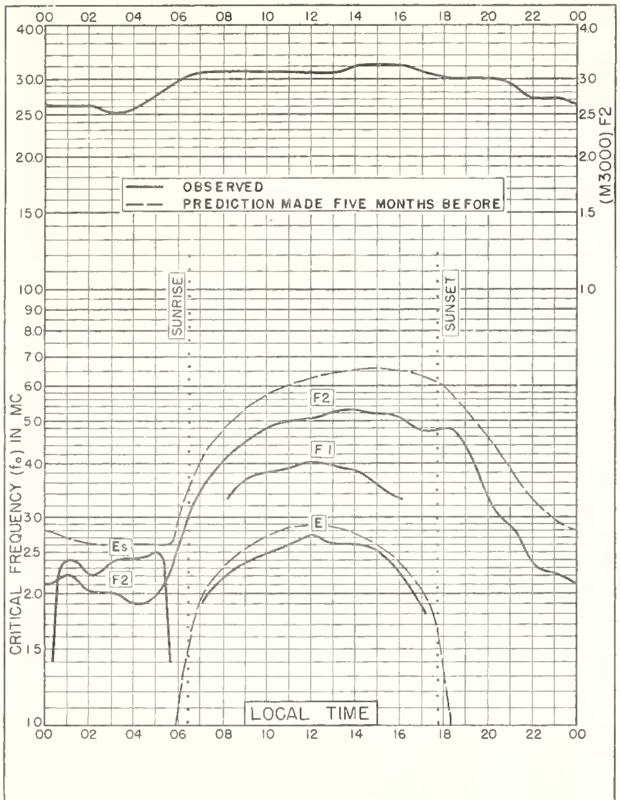


Fig. 13. UPSALA, SWEDEN
59.8°N, 17.6°E MARCH 1952

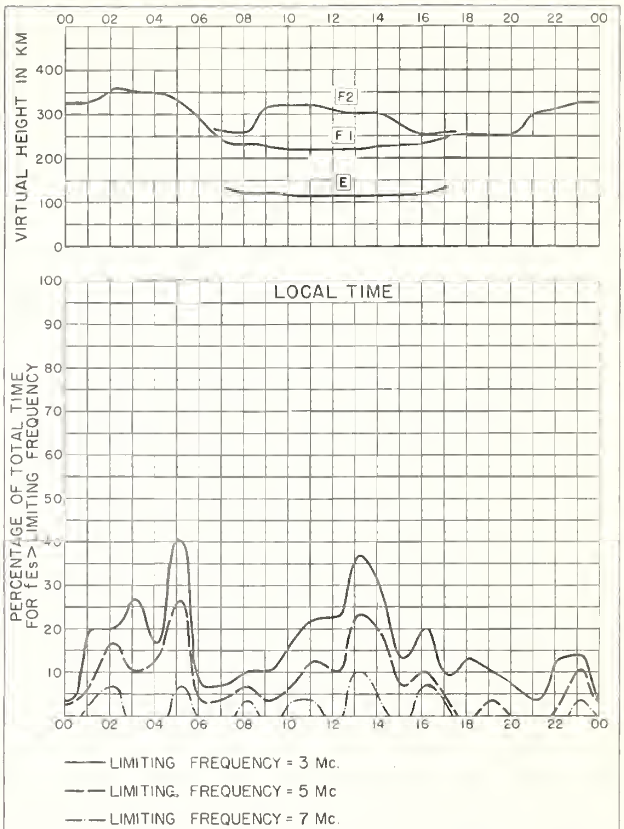


Fig. 14. UPSALA, SWEDEN MARCH 1952

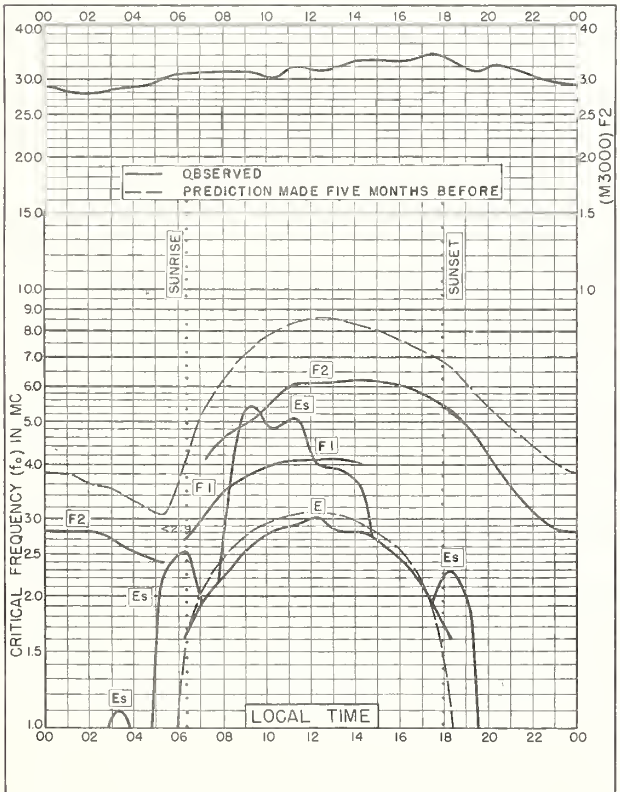


Fig. 15. ADAK, ALASKA
51.9°N, 176.6°W MARCH 1952

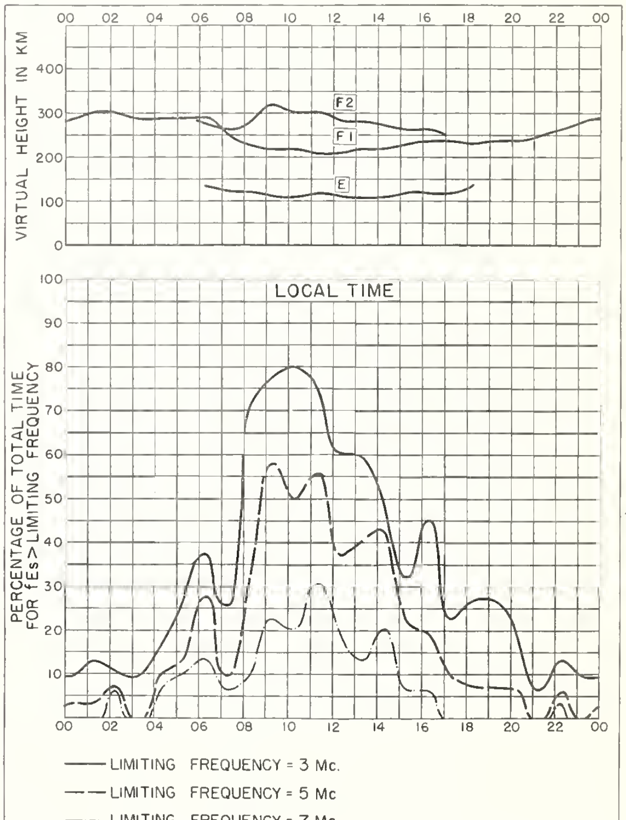


Fig. 16. ADAK, ALASKA MARCH 1952

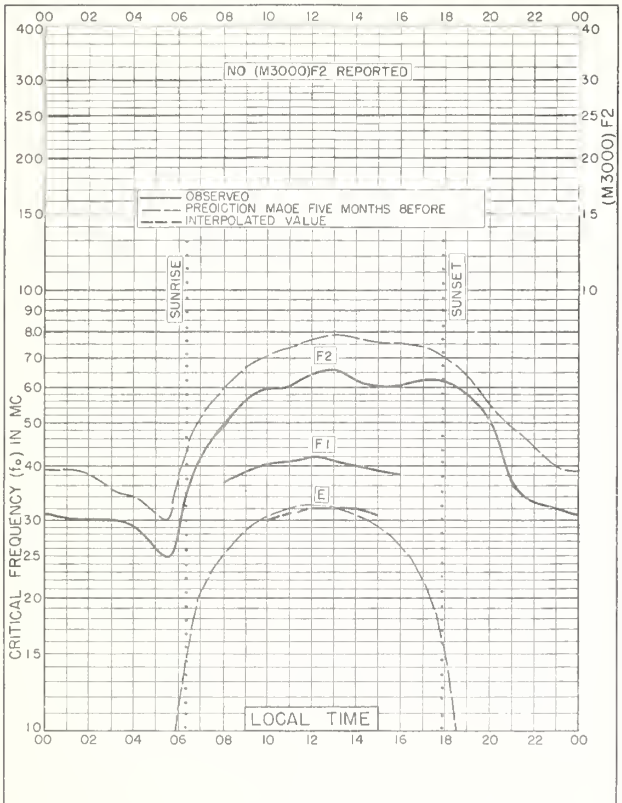


Fig. 17. GRAZ, AUSTRIA
47.1°N, 15.5°E MARCH 1952

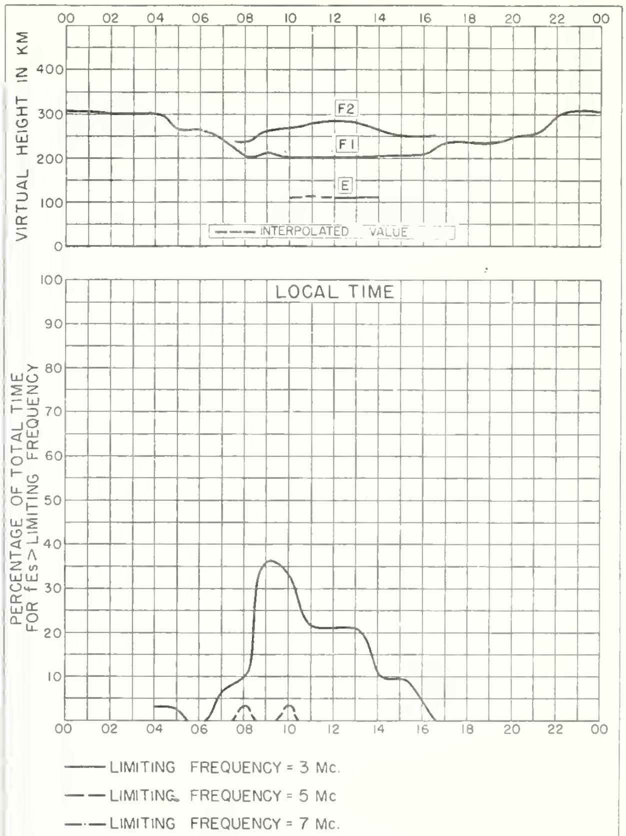


Fig. 18. GRAZ, AUSTRIA MARCH 1952

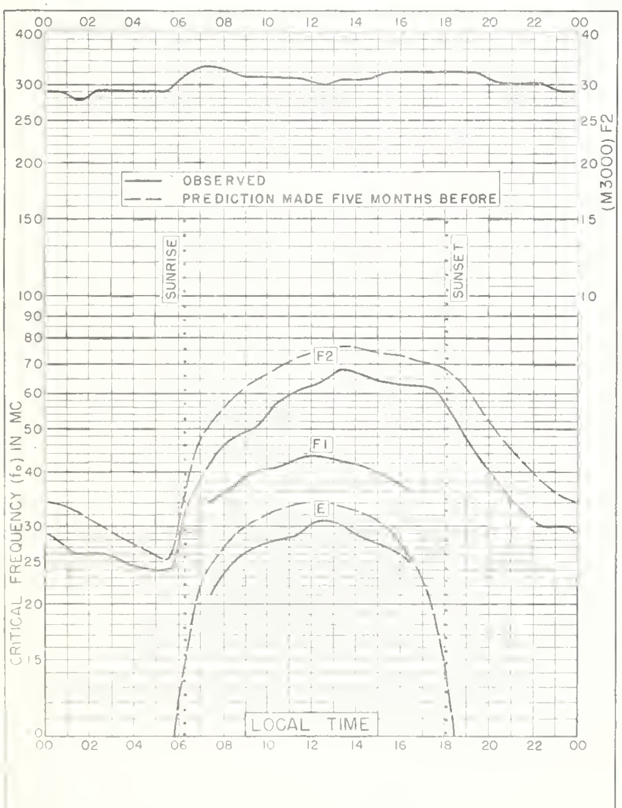


Fig. 19. BATAVIA, OHIO
39.1°N, 84.1°W MARCH 1952

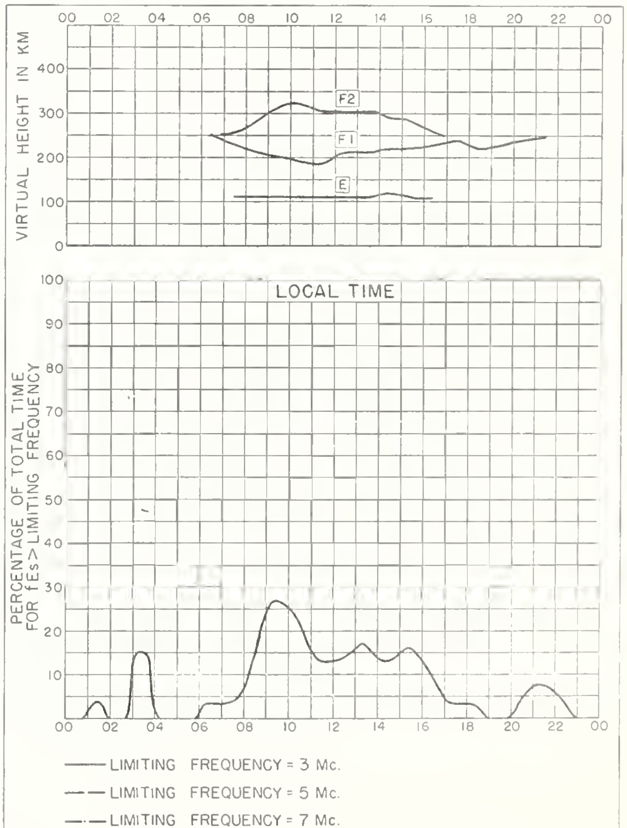


Fig. 20. BATAVIA, OHIO MARCH 1952

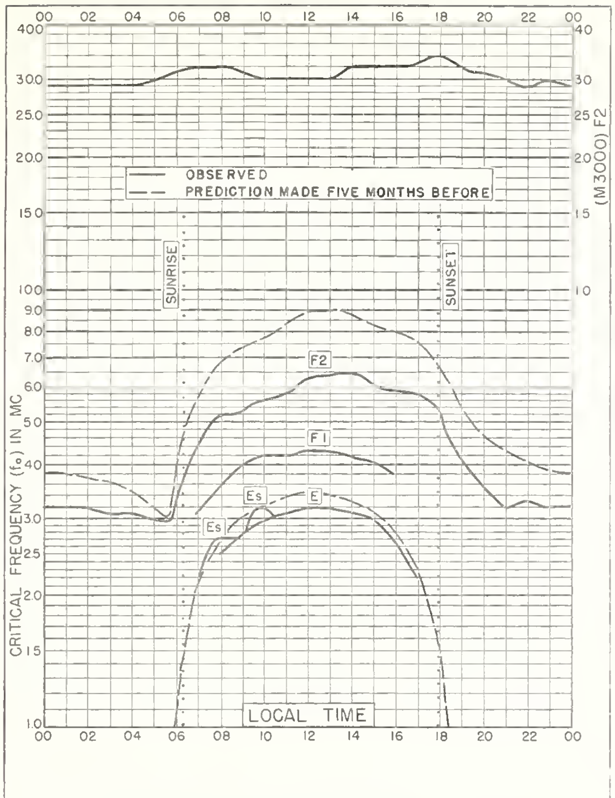


Fig 21. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W MARCH 1952

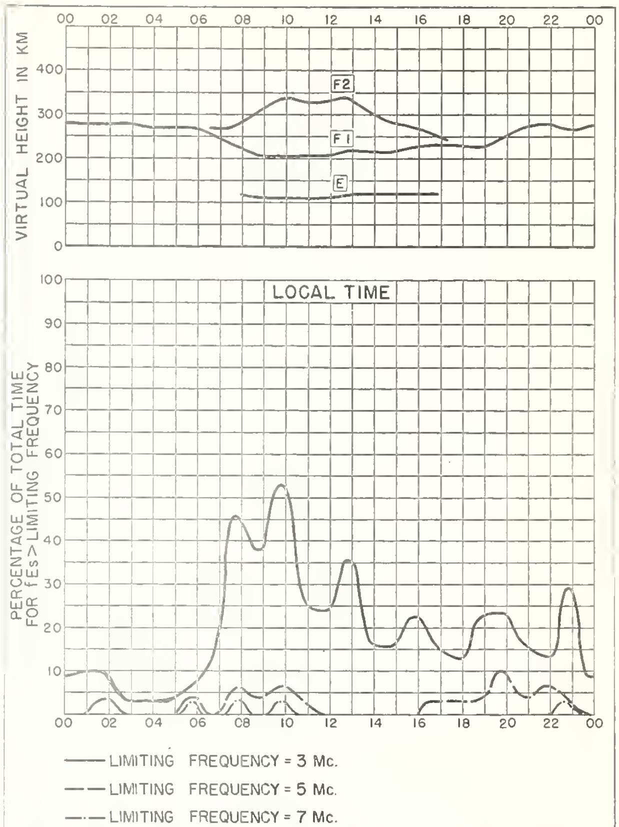


Fig 22. SAN FRANCISCO, CALIFORNIA MARCH 1952

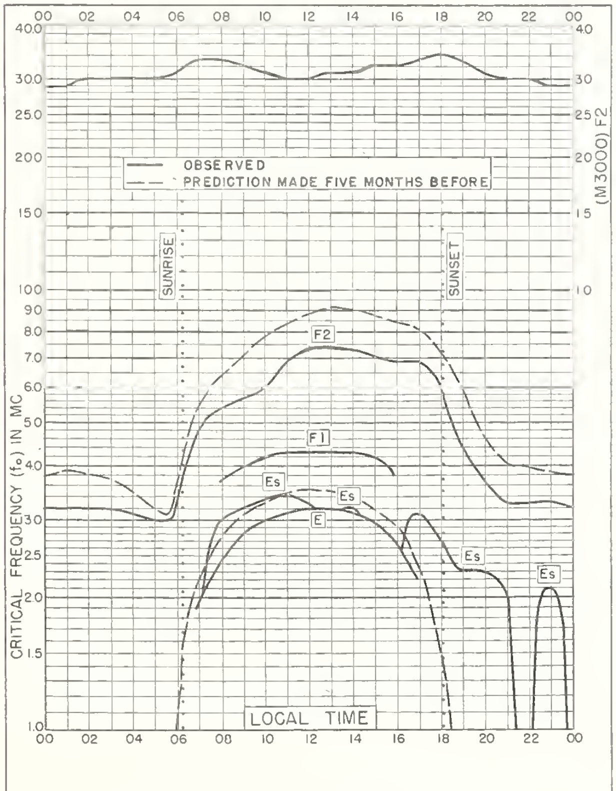


Fig 23. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W MARCH 1952

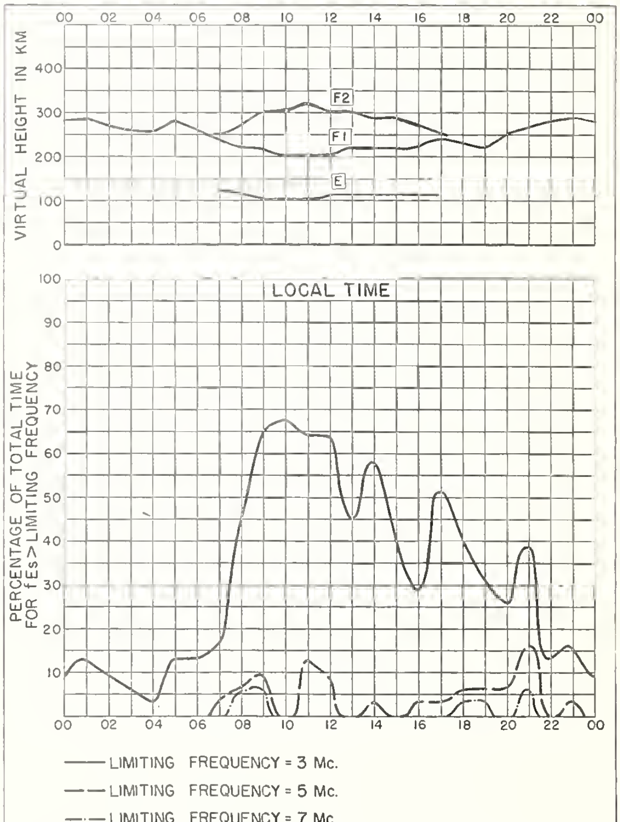


Fig. 24. WHITE SANDS, NEW MEXICO MARCH 1952

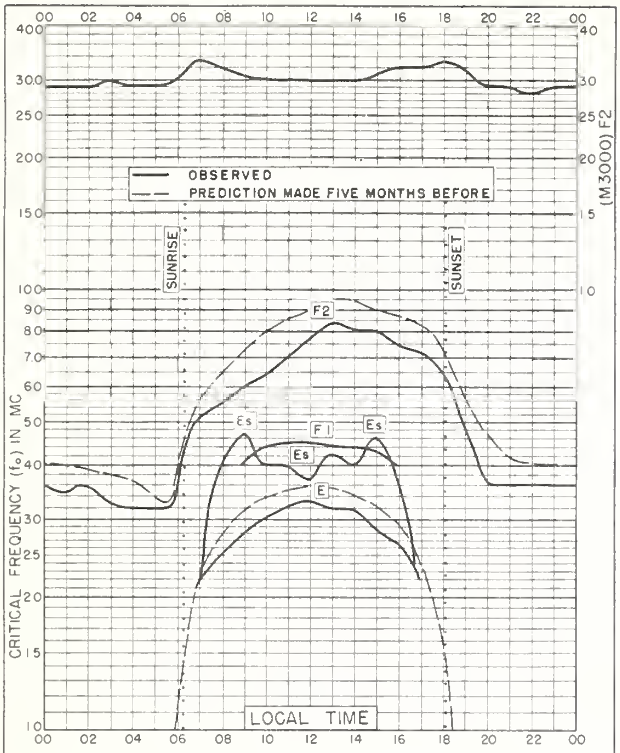


Fig. 25. BATON ROUGE, LOUISIANA
30.5°N, 91.2°W MARCH 1952

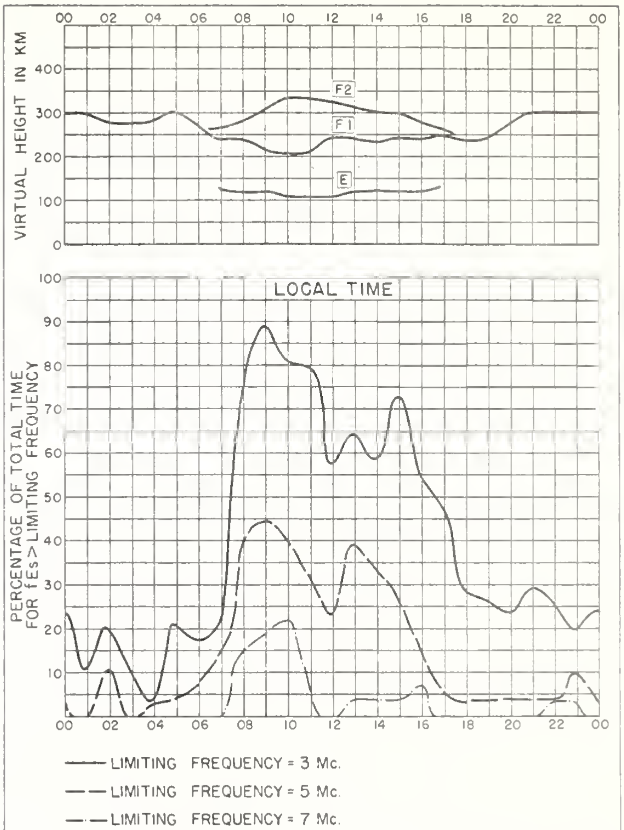


Fig. 26. BATON ROUGE, LOUISIANA MARCH 1952

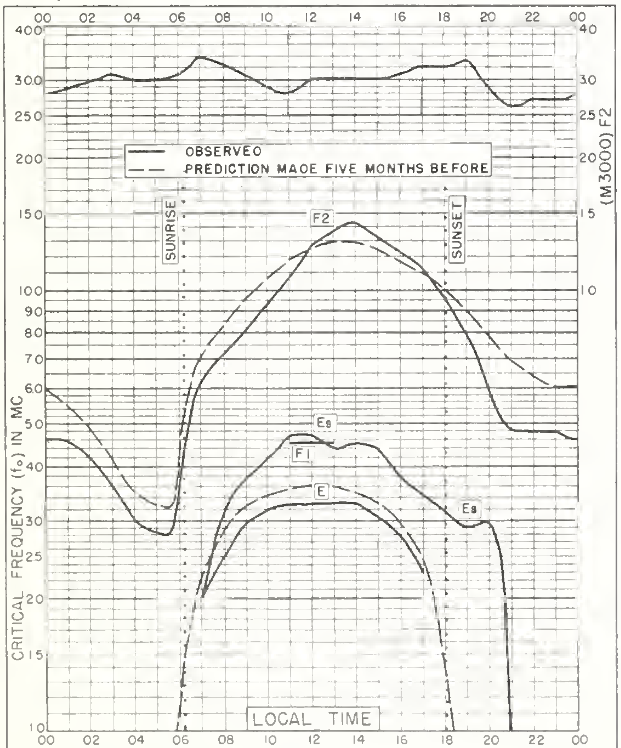


Fig. 27. OKINAWA I.
26.3°N, 127.8°E MARCH 1952

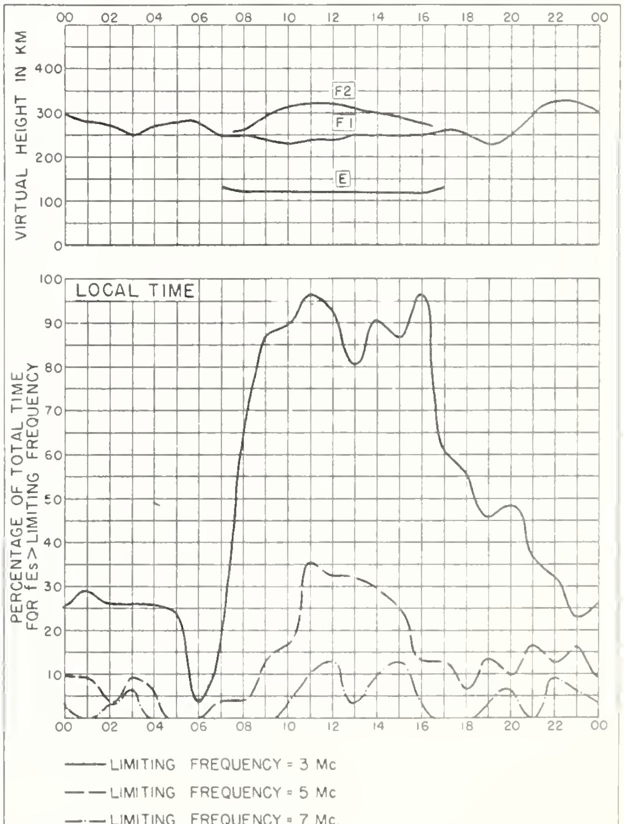


Fig. 28. OKINAWA I. MARCH 1952

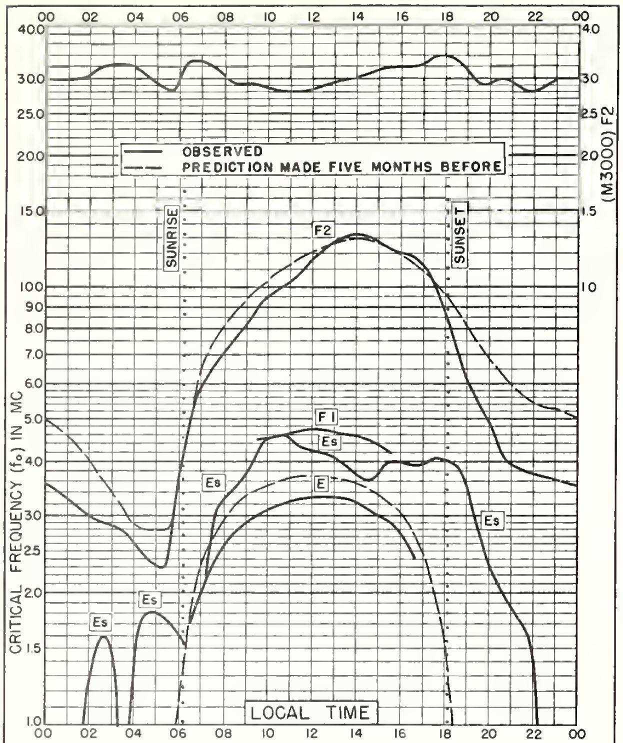


Fig. 29. MAUI, HAWAII
20.8°N, 156.5°W MARCH 1952

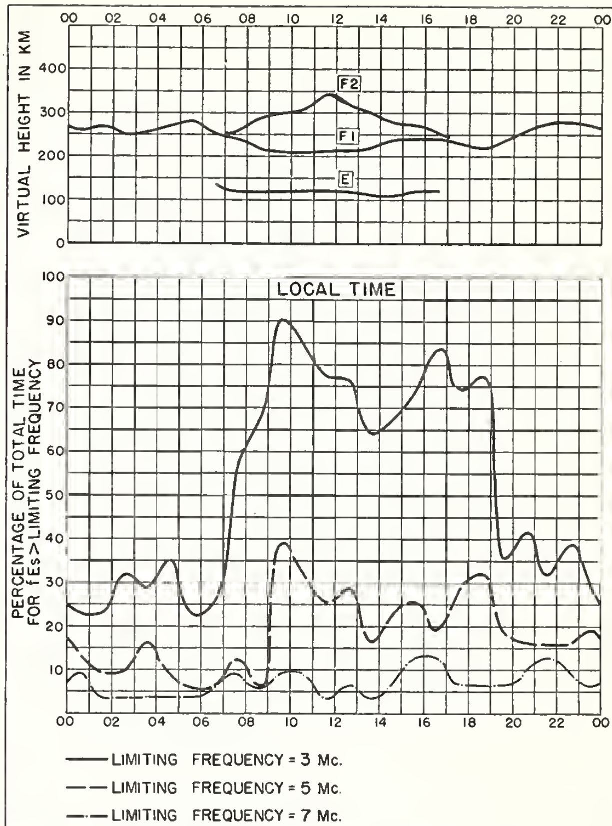


Fig. 30. MAUI, HAWAII MARCH 1952

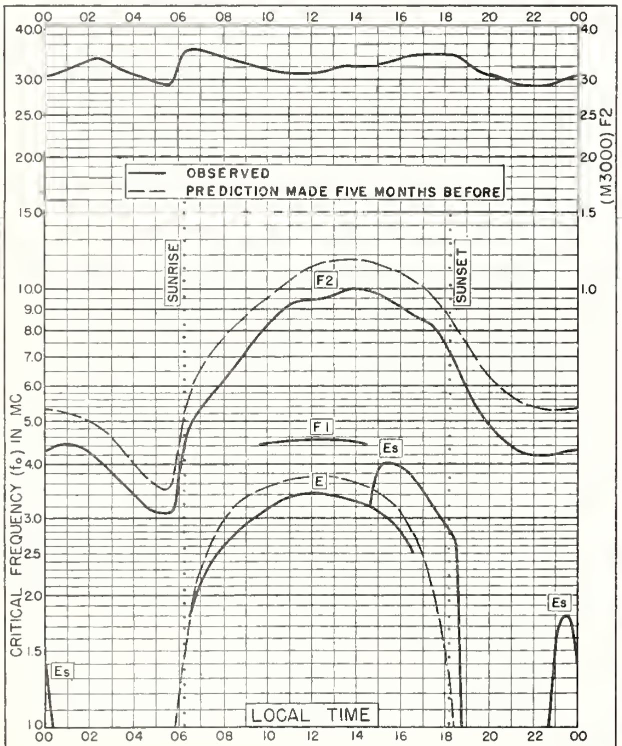


Fig. 31. PUERTO RICO, W. I.
18.5°N, 67.2°W MARCH 1952

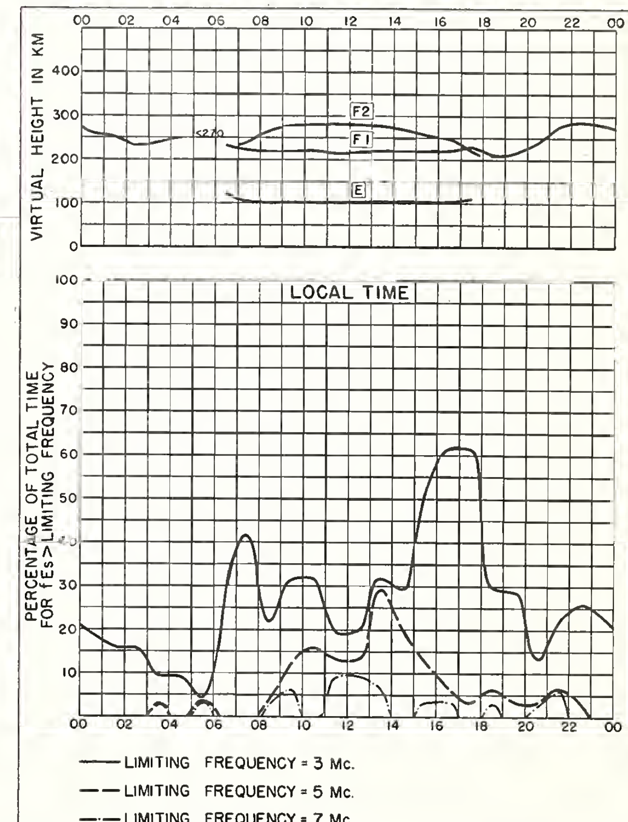


Fig. 32. PUERTO RICO, W. I. MARCH 1952

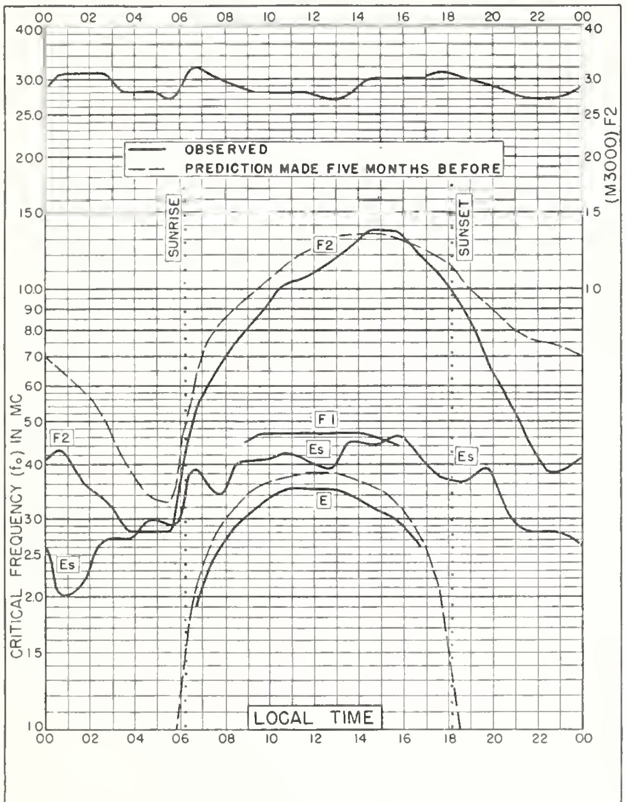


Fig. 33. PANAMA CANAL ZONE
9.4°N, 79.9°W MARCH 1952

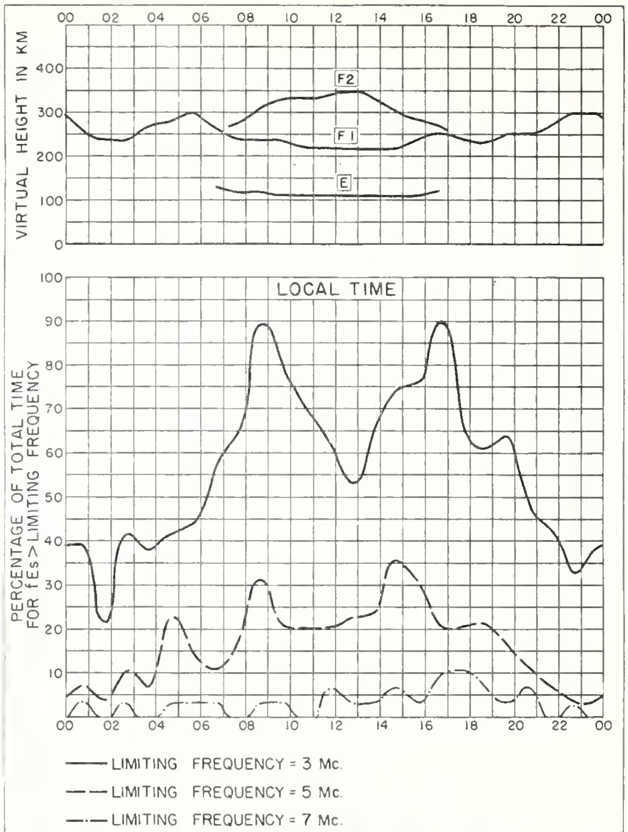


Fig. 34. PANAMA CANAL ZONE MARCH 1952

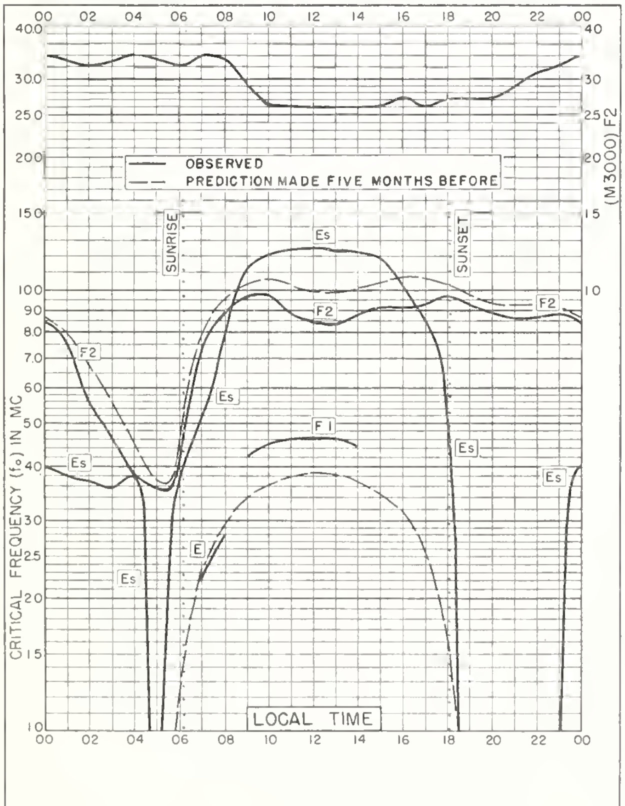


Fig. 35. HUANCAYO, PERU
12.0°S, 75.3°W MARCH 1952

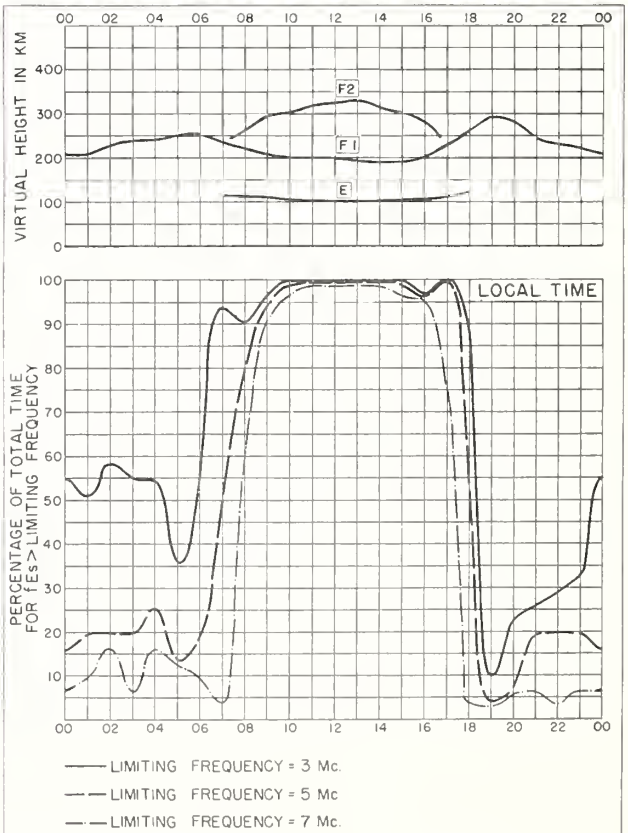


Fig. 36. HUANCAYO, PERU MARCH 1952

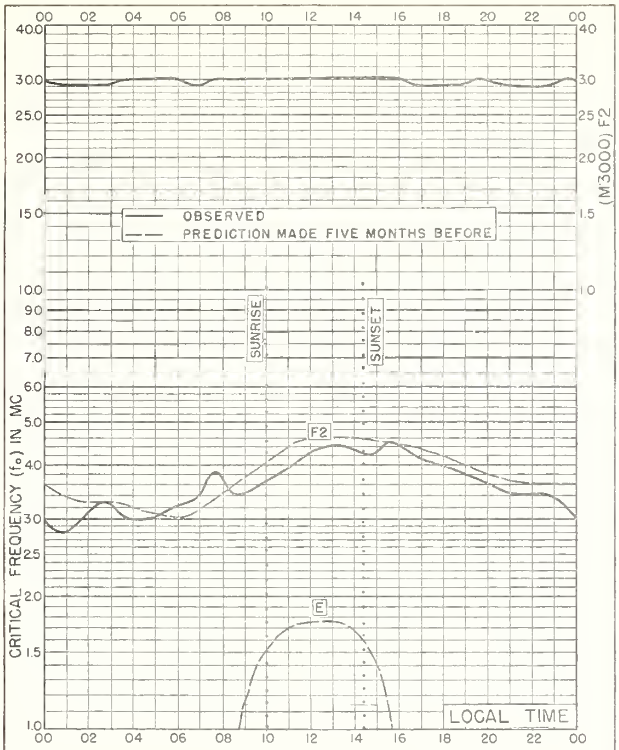
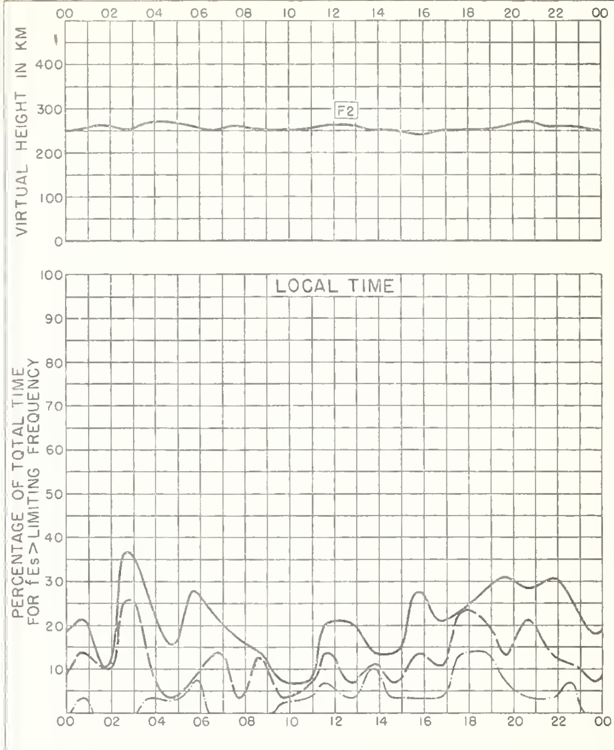


Fig. 37. RESOLUTE BAY, CANADA
74.7°N, 94.9°W FEBRUARY 1952



LIMITING FREQUENCY = 3 Mc.
LIMITING FREQUENCY = 5 Mc
LIMITING FREQUENCY = 7 Mc.

Fig. 38. RESOLUTE BAY, CANADA FEBRUARY 1952

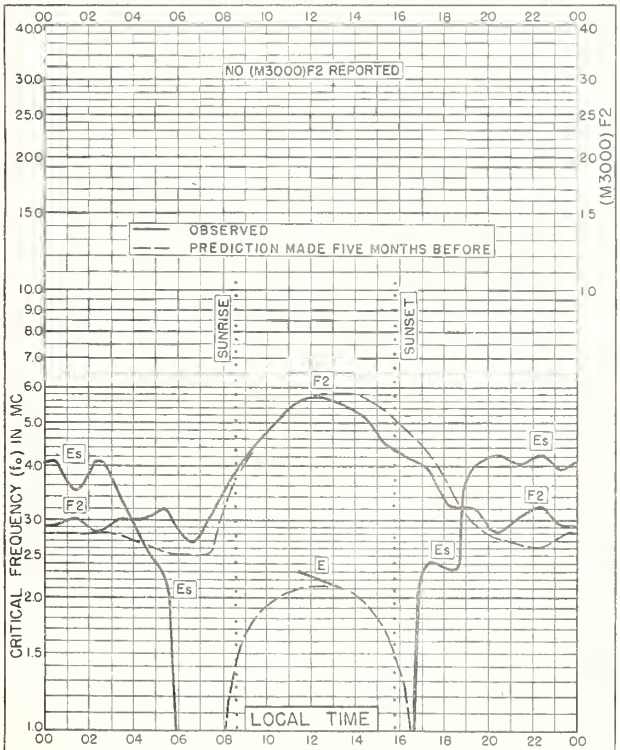
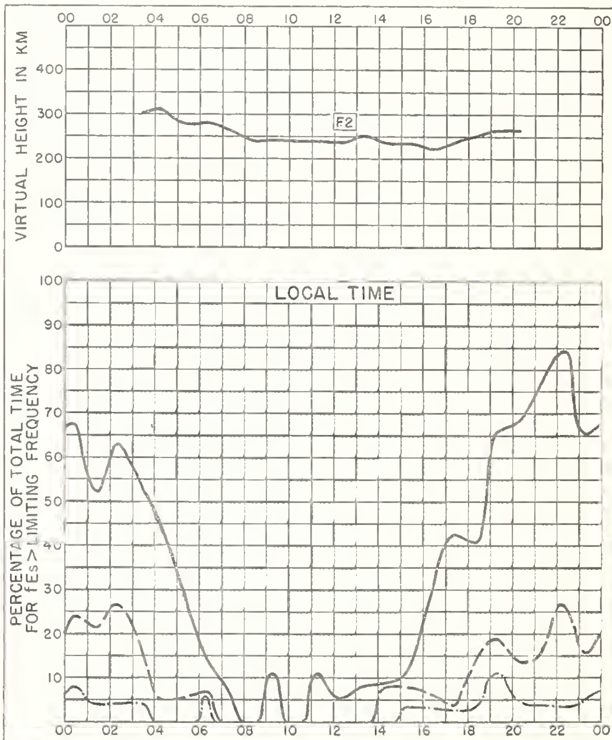


Fig. 39. KIRUNA, SWEDEN
67.8°N, 20.5°E FEBRUARY 1952



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LIMITING FREQUENCY = 5 Mc.
LIMITING FREQUENCY = 7 Mc.

Fig. 40. KIRUNA, SWEDEN FEBRUARY 1952

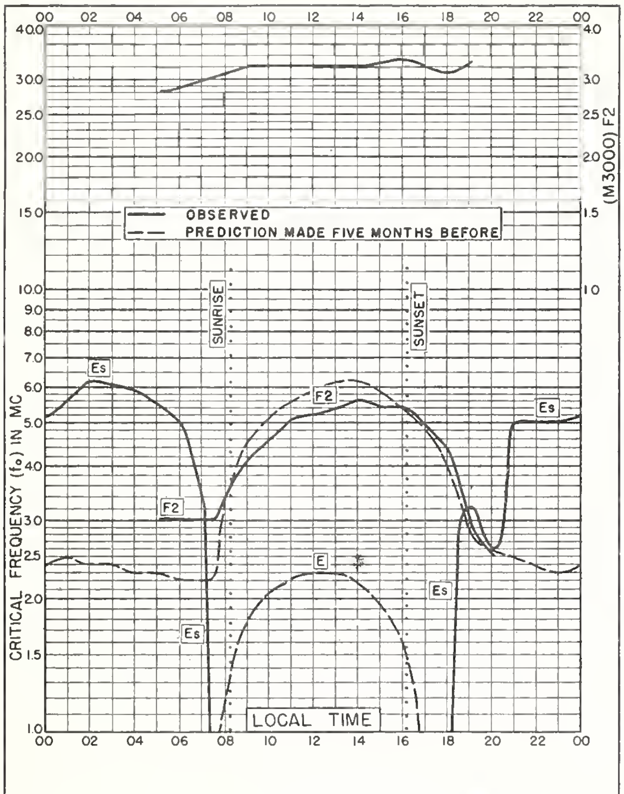

Fig. 41. FAIRBANKS, ALASKA
64.9°N, 147.8°W FEBRUARY 1952

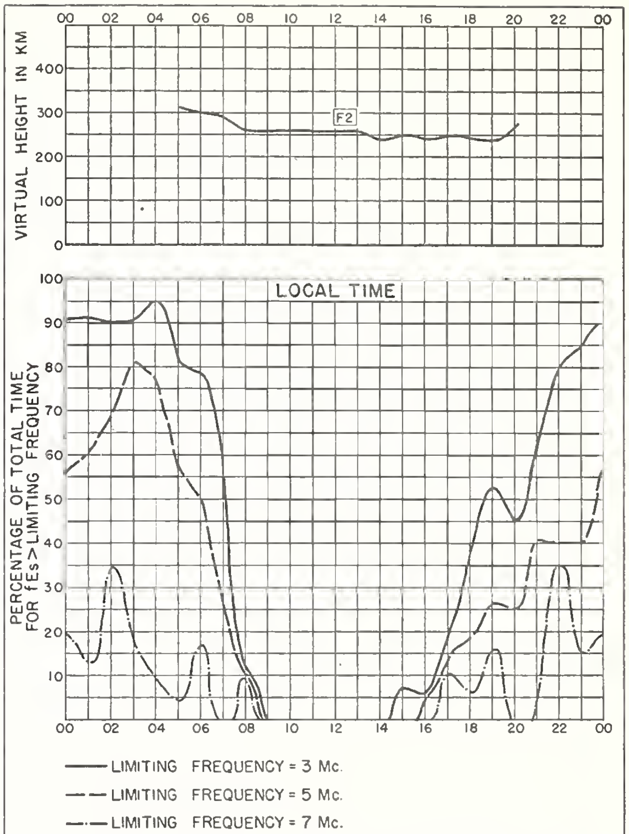

Fig. 42. FAIRBANKS, ALASKA FEBRUARY 1952

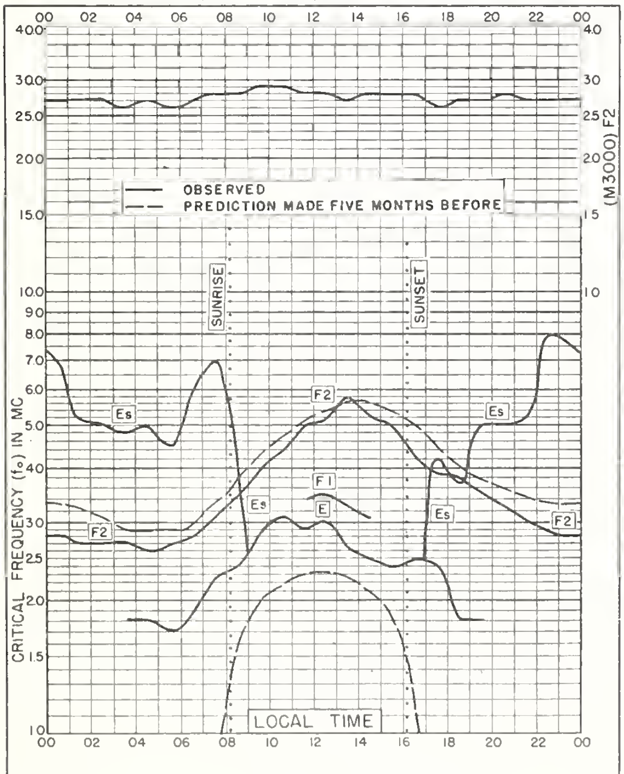

Fig. 43. BAKER LAKE, CANADA
64.3°N, 96.0°W FEBRUARY 1952

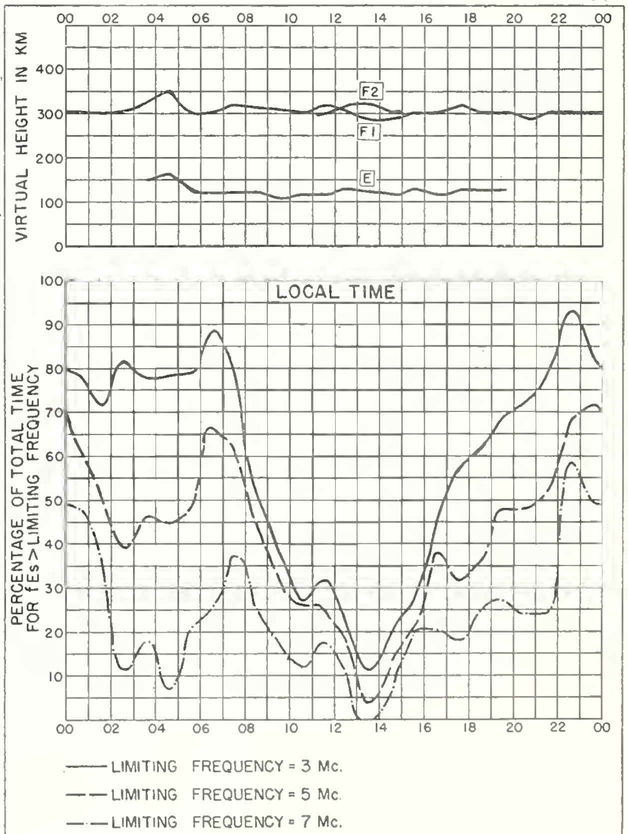

Fig. 44. BAKER LAKE, CANADA FEBRUARY 1952

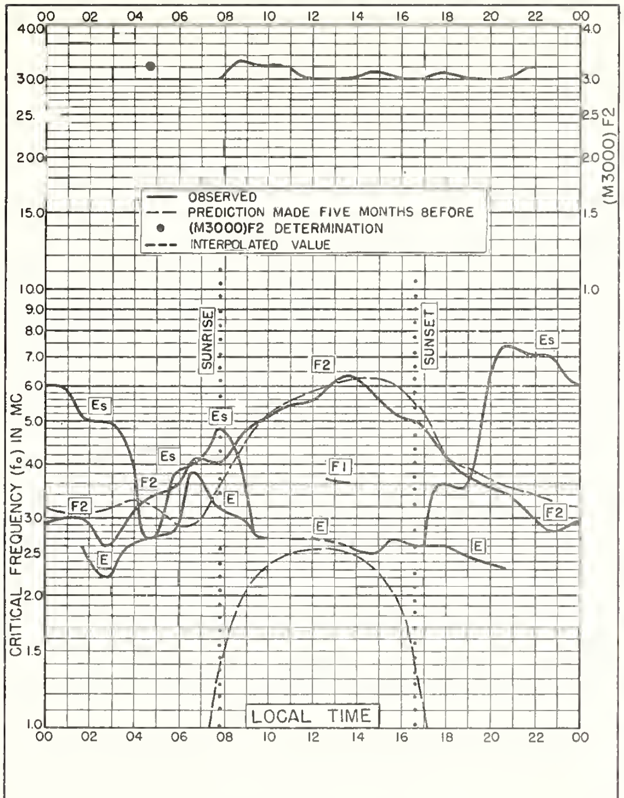

Fig. 45. CHURCHILL, CANADA
58.8°N, 94.2°W FEBRUARY 1952

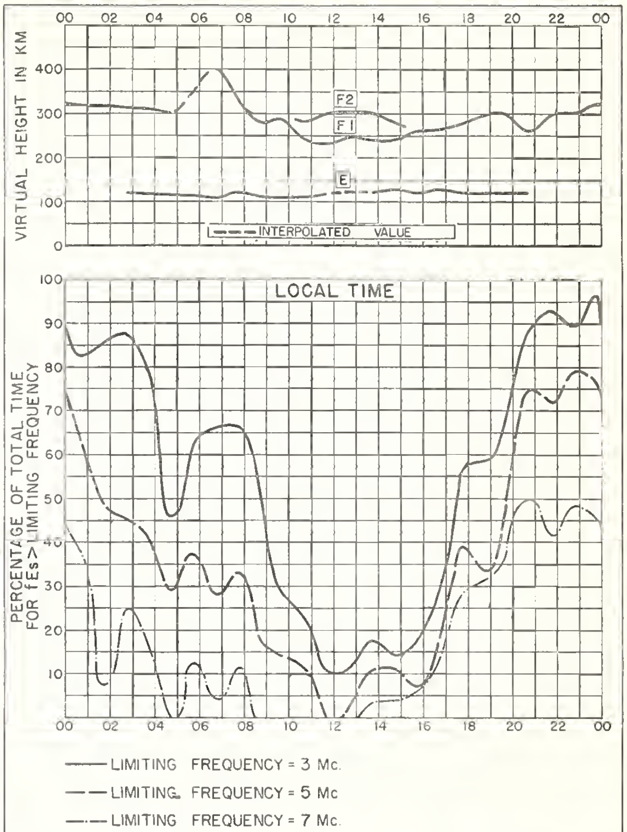

Fig. 46. CHURCHILL, CANADA FEBRUARY 1952

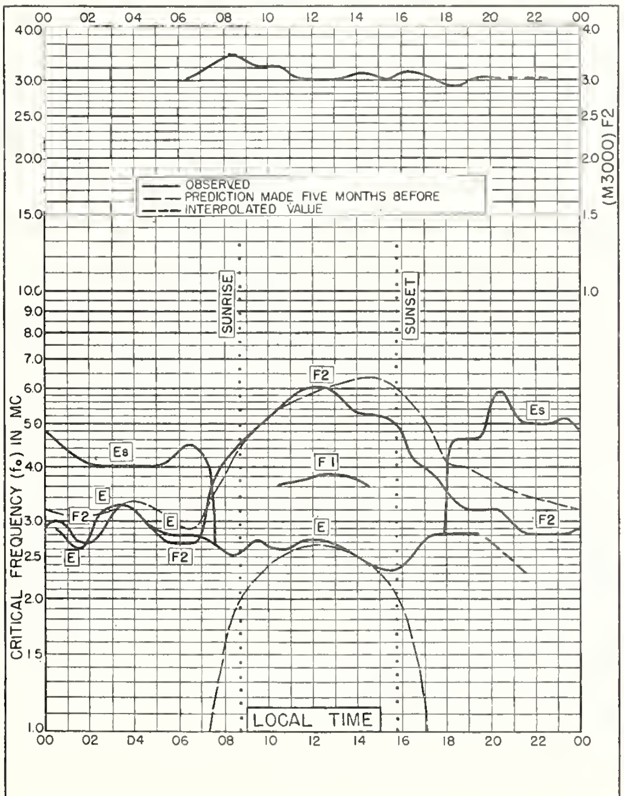

Fig. 47. FORT CHIMO, CANADA
58.1°N, 68.3°W FEBRUARY 1952

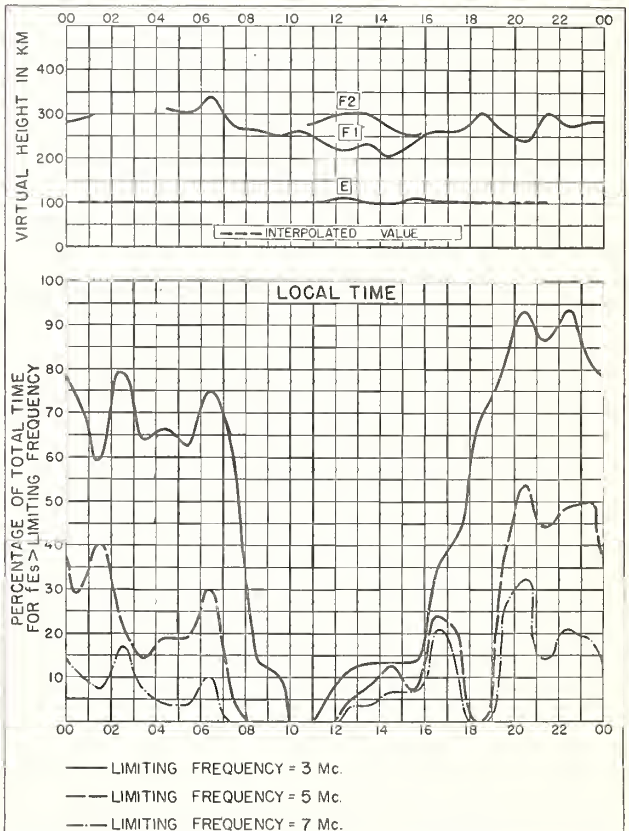

Fig. 48. FORT CHIMO, CANADA FEBRUARY 1952

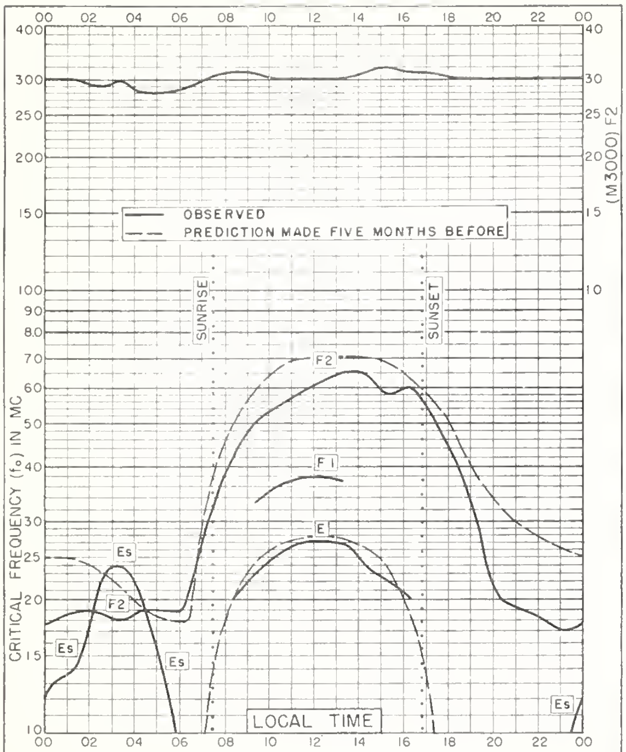

Fig 49. PRINCE RUPERT, CANADA
54.3°N, 130.3°W FEBRUARY 1952

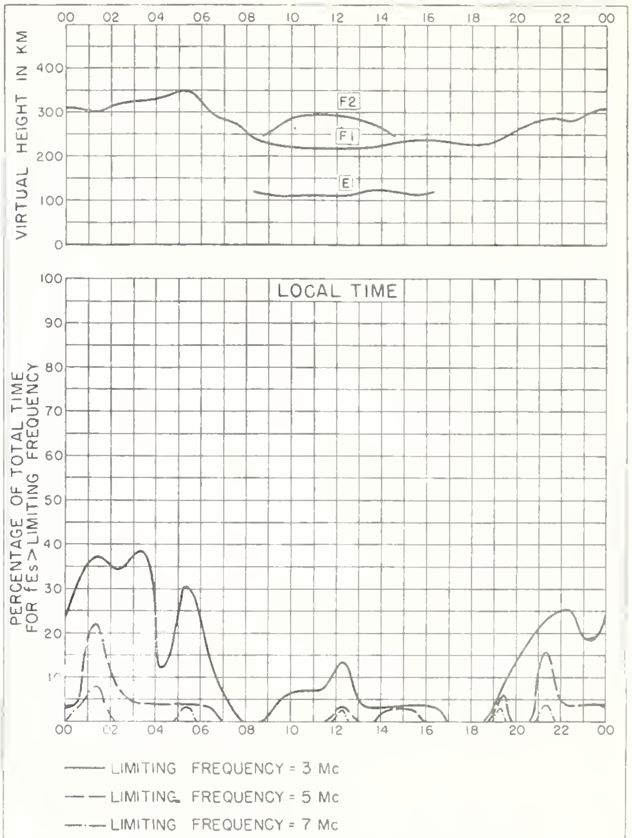

Fig. 50. PRINCE RUPERT, CANADA FEBRUARY 1952

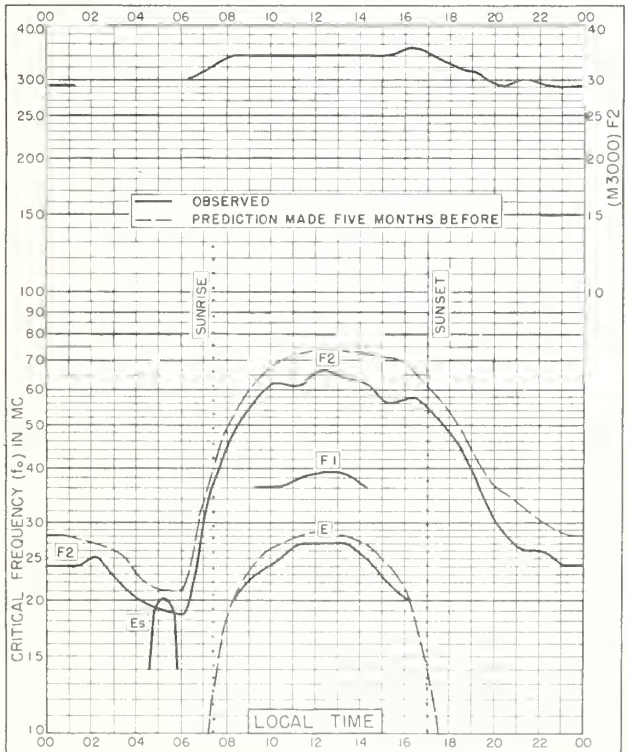

Fig 51. De BILT, HOLLAND
52.1°N, 5.2°E FEBRUARY 1952

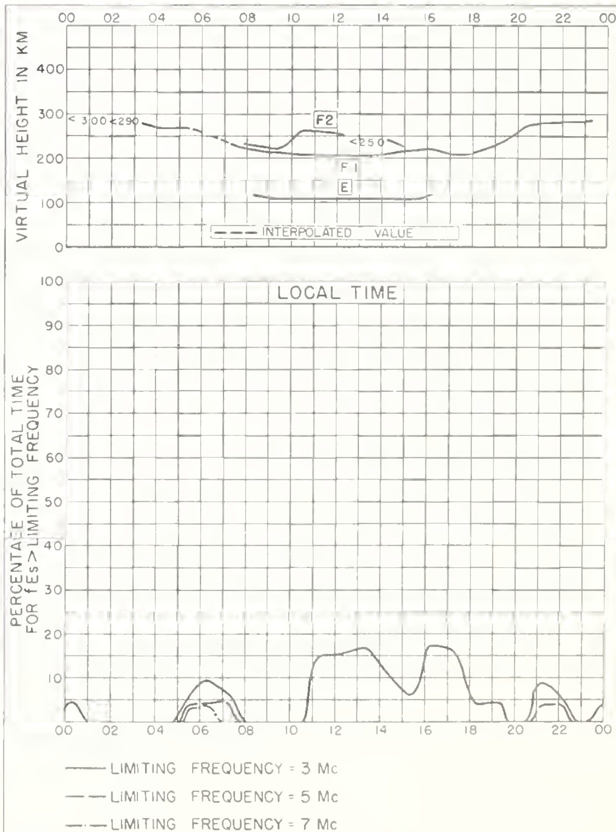

Fig. 52. De BILT, HOLLAND FEBRUARY 1952

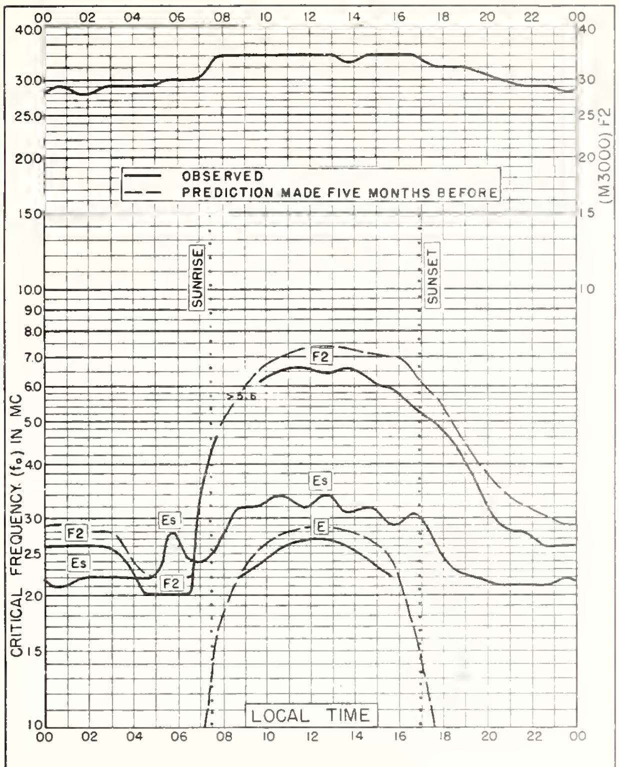

Fig. 53. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E FEBRUARY 1952

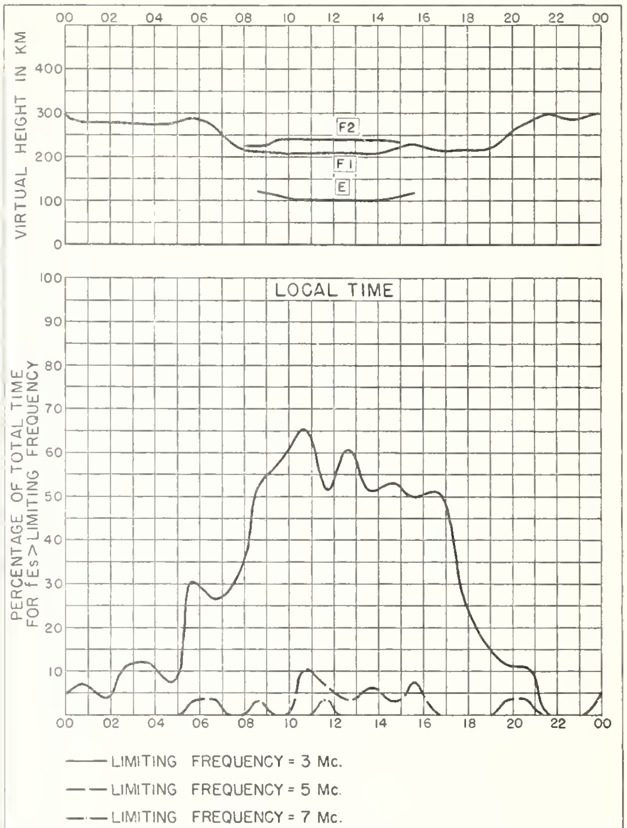

Fig. 54. LINDAU/HARZ, GERMANY FEBRUARY 1952

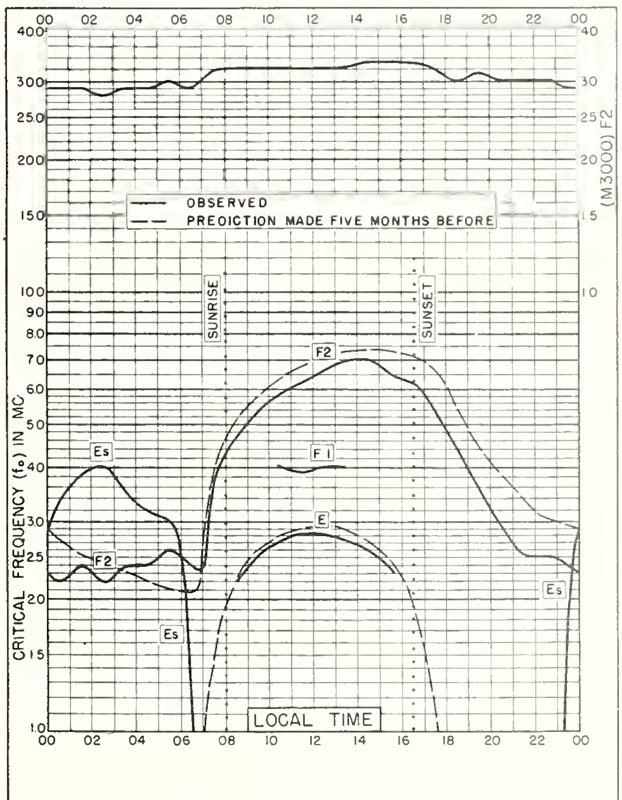

Fig. 55. WINNIPEG, CANADA
49.9°N, 97.4°W FEBRUARY 1952

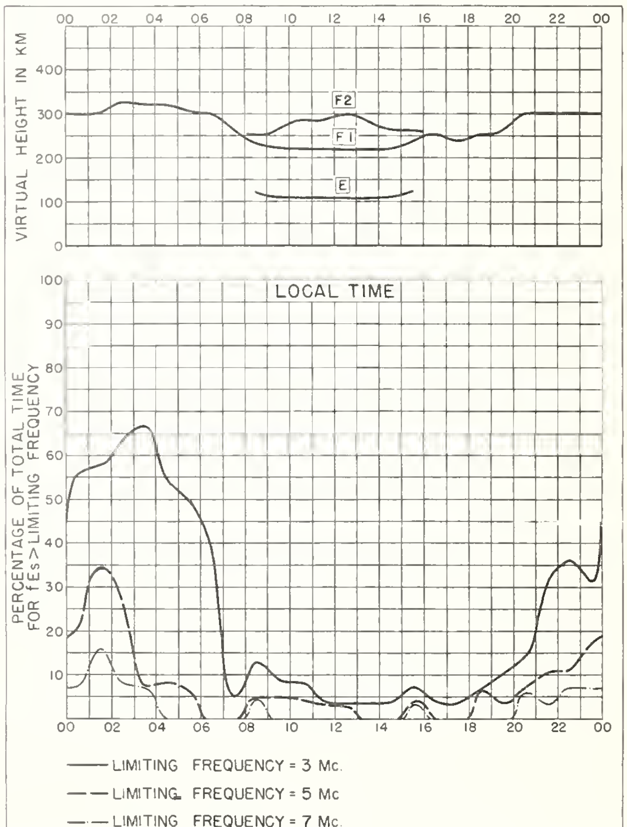

Fig. 56. WINNIPEG, CANADA FEBRUARY 1952

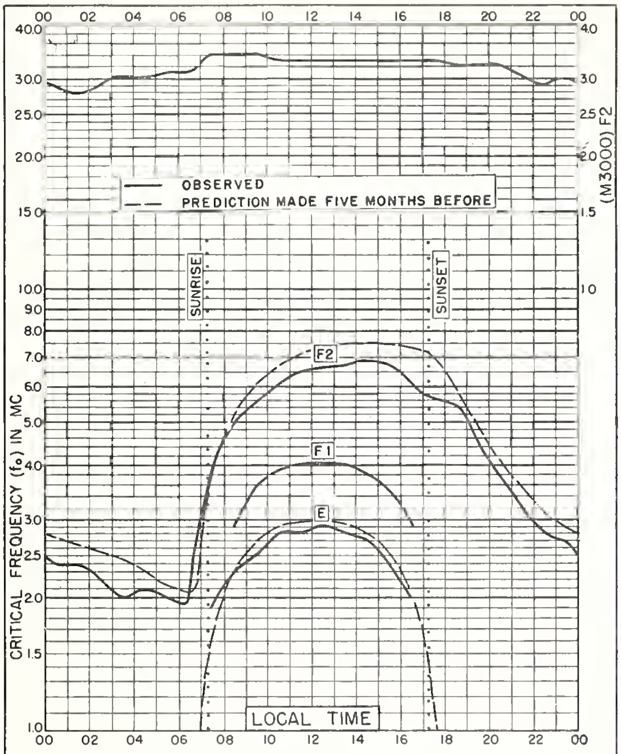

Fig. 57. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W FEBRUARY 1952

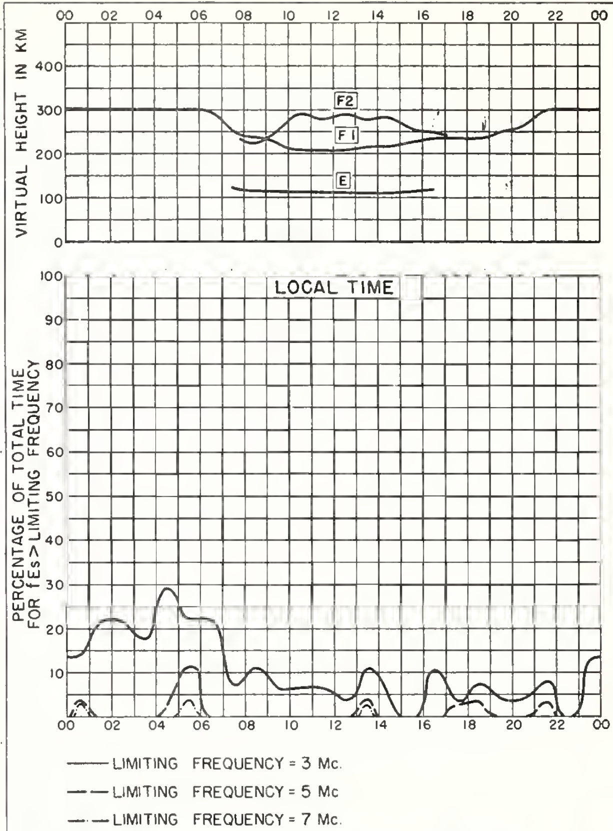

Fig. 58. ST. JOHN'S, NEWFOUNDLAND FEBRUARY 1952

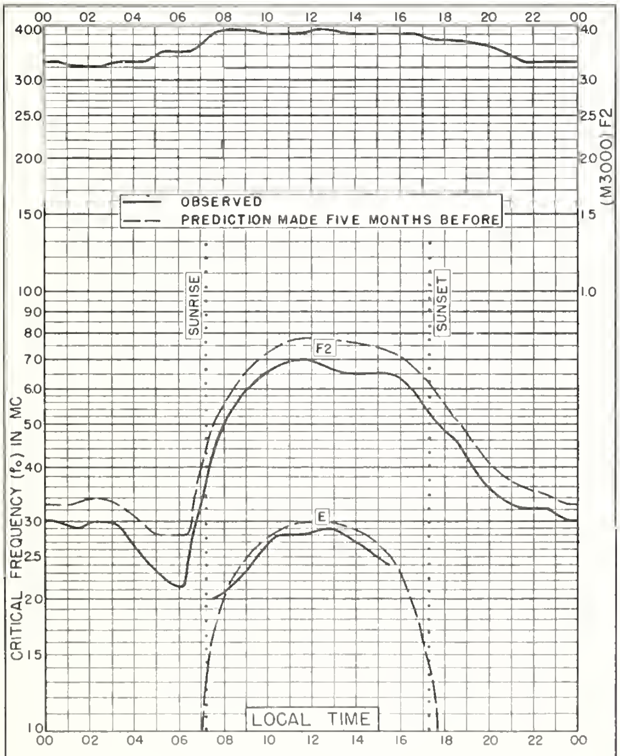

Fig 59. SCHWARZENBURG, SWITZERLAND
46.8°N, 7.3°E FEBRUARY 1952

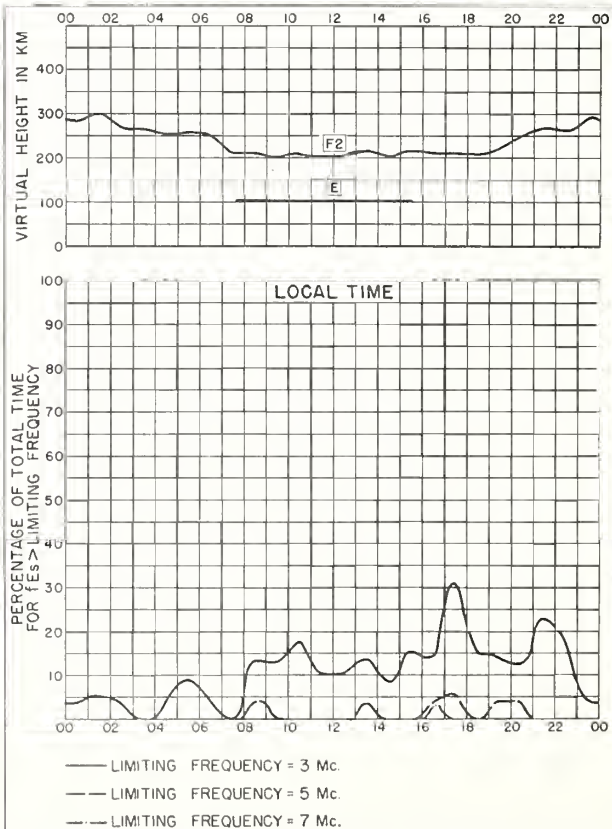

Fig 60. SCHWARZENBURG, SWITZERLAND FEBRUARY 1952

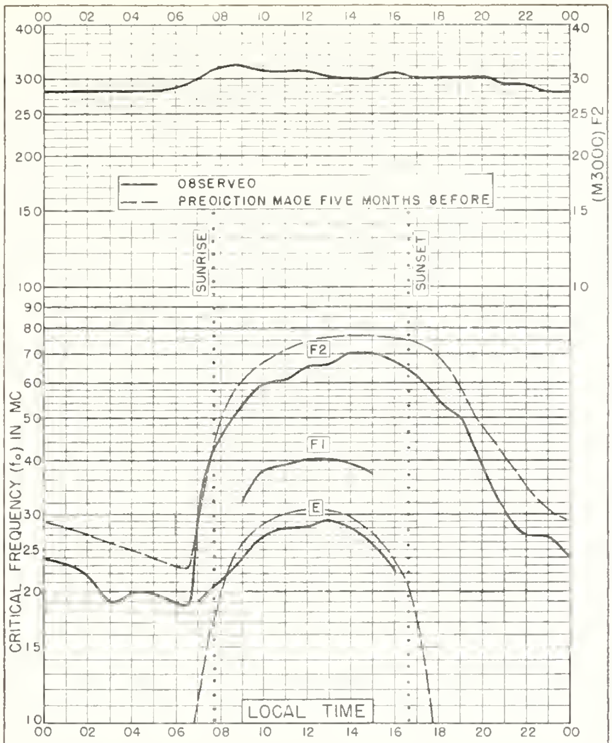

Fig. 61. OTTAWA, CANADA
45.4°N, 75.7°W FEBRUARY 1952

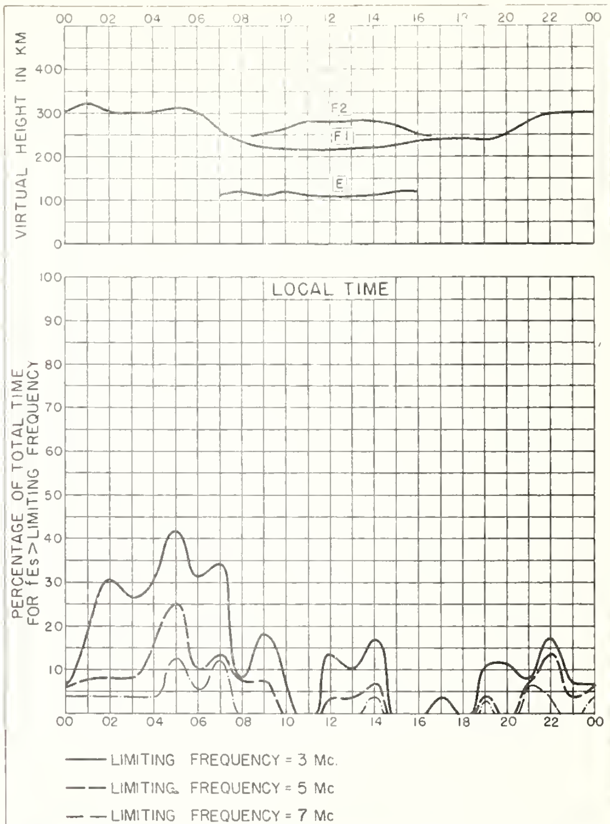

Fig. 62. OTTAWA, CANADA FEBRUARY 1952

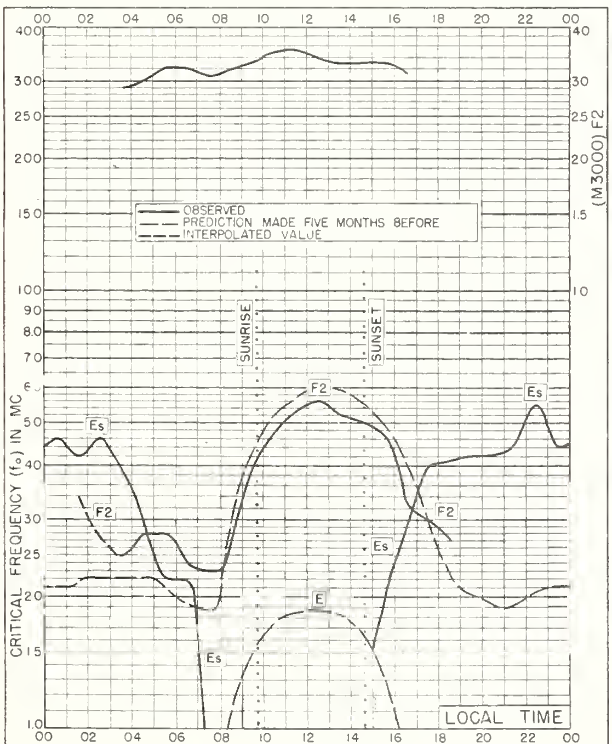

Fig.63. REYKJAVIK, ICELAND
64.1°N, 21.8°W JANUARY 1952

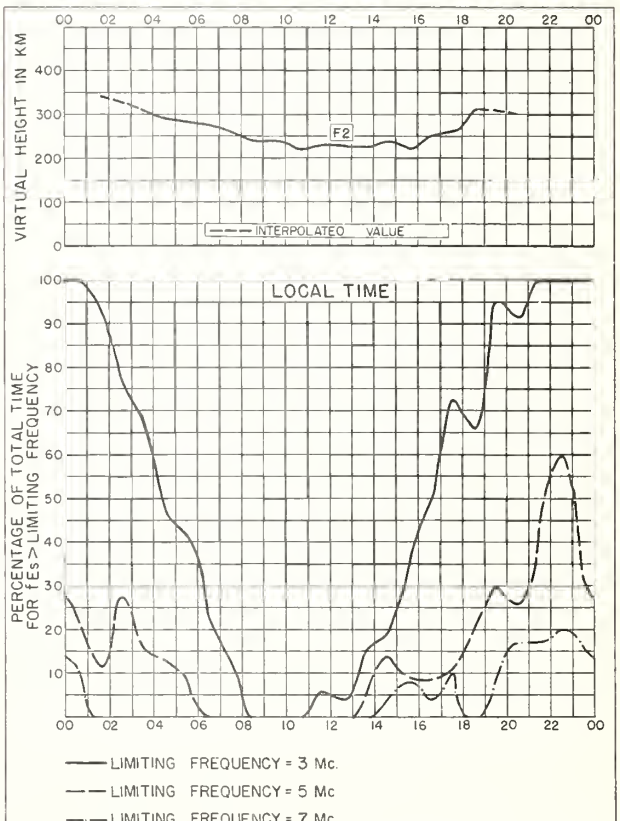

Fig.64. REYKJAVIK, ICELAND JANUARY 1952

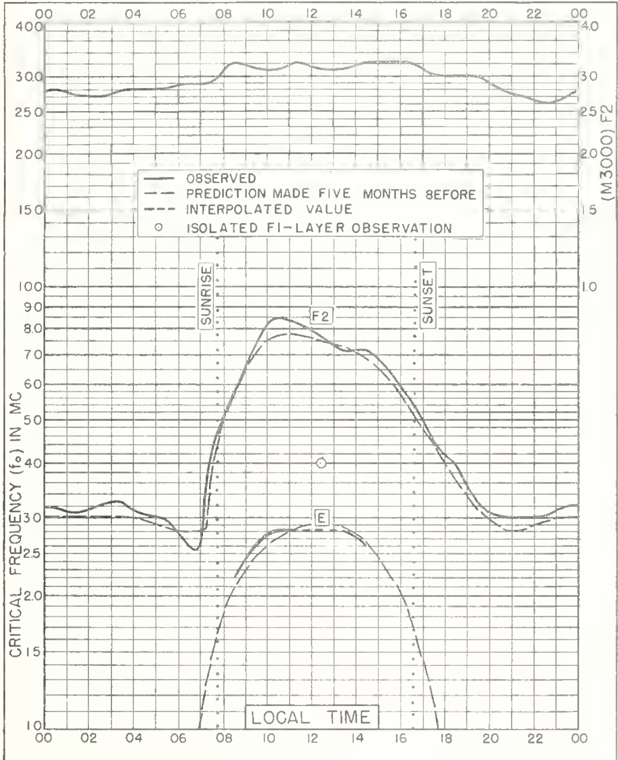

Fig. 65. WAKKANAI, JAPAN
45.4°N, 141.7°E JANUARY 1952

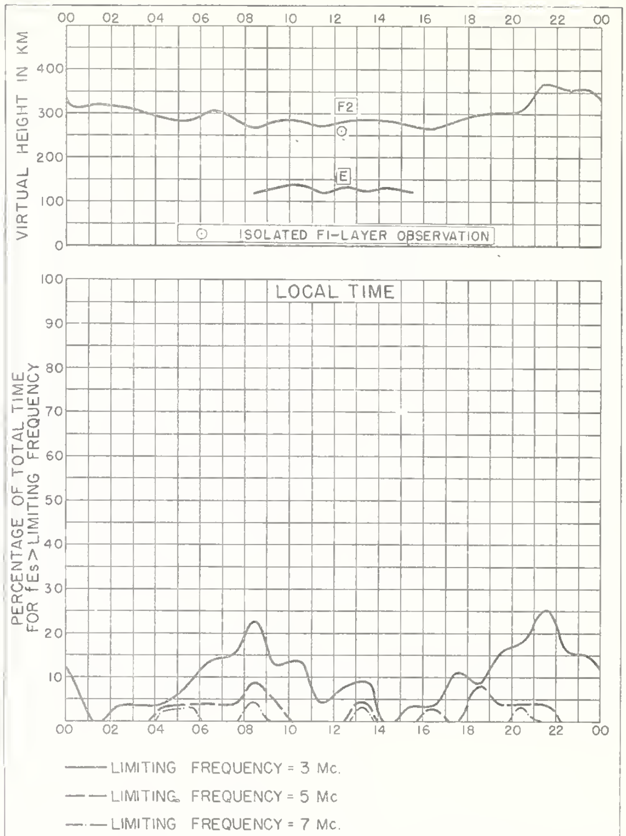

Fig. 66. WAKKANAI, JAPAN JANUARY 1952

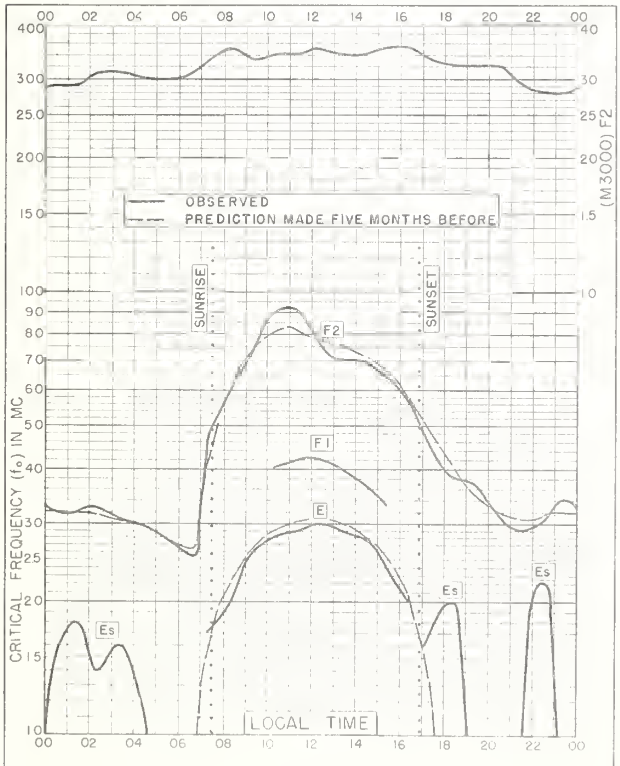

Fig. 67. AKITA, JAPAN
39.7°N, 140.1°E JANUARY 1952

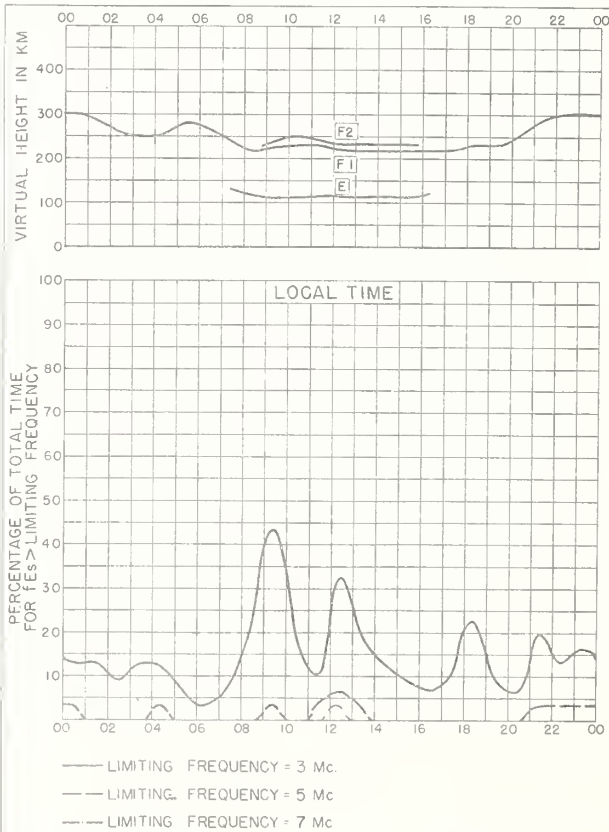

Fig. 68. AKITA, JAPAN JANUARY 1952

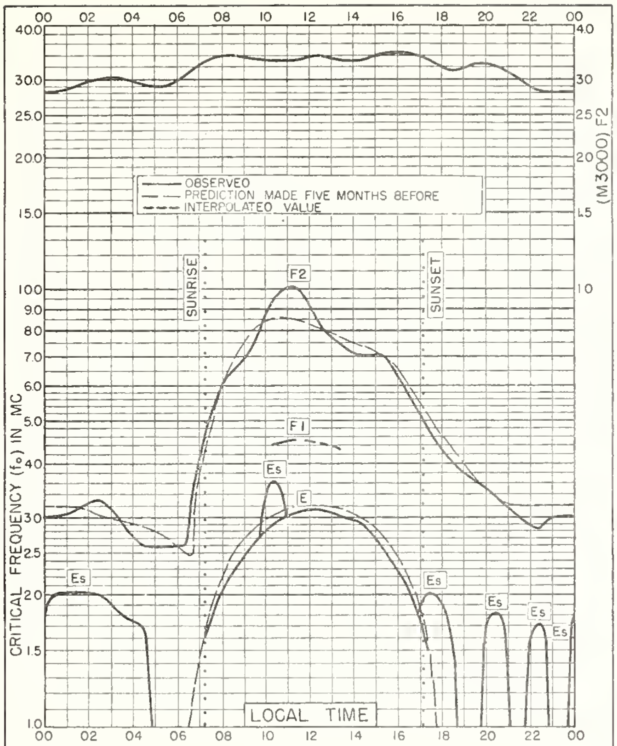

Fig. 69. TOKYO, JAPAN
35.7°N, 139.5°E JANUARY 1952

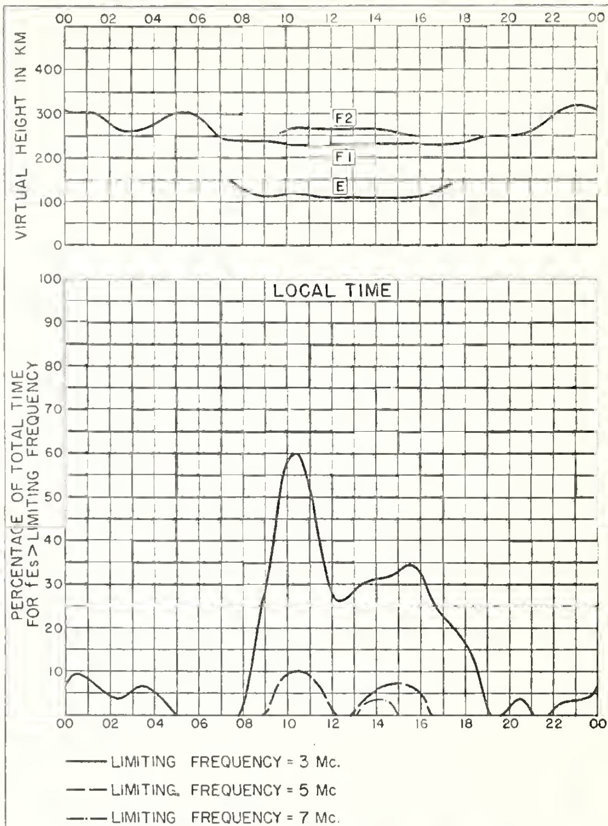

Fig. 70. TOKYO, JAPAN JANUARY 1952

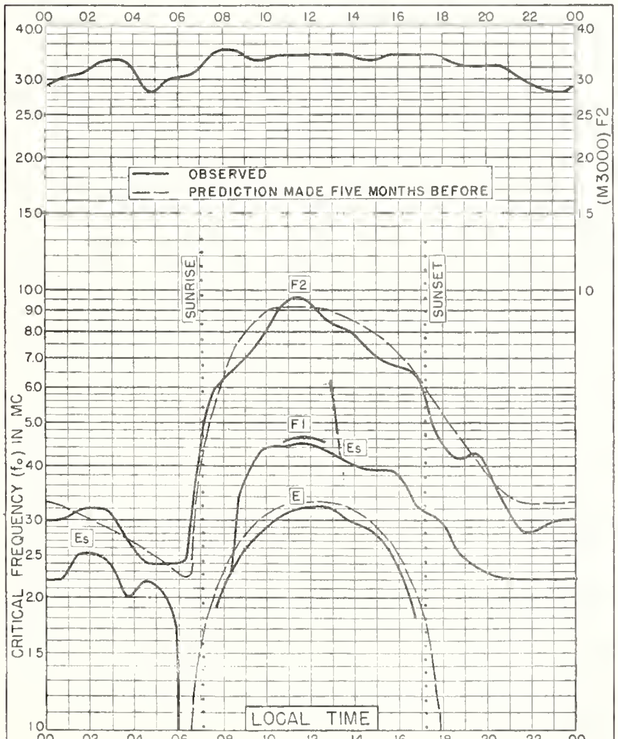

Fig. 71. YAMAGAWA, JAPAN
31.2°N, 130.6°E JANUARY 1952

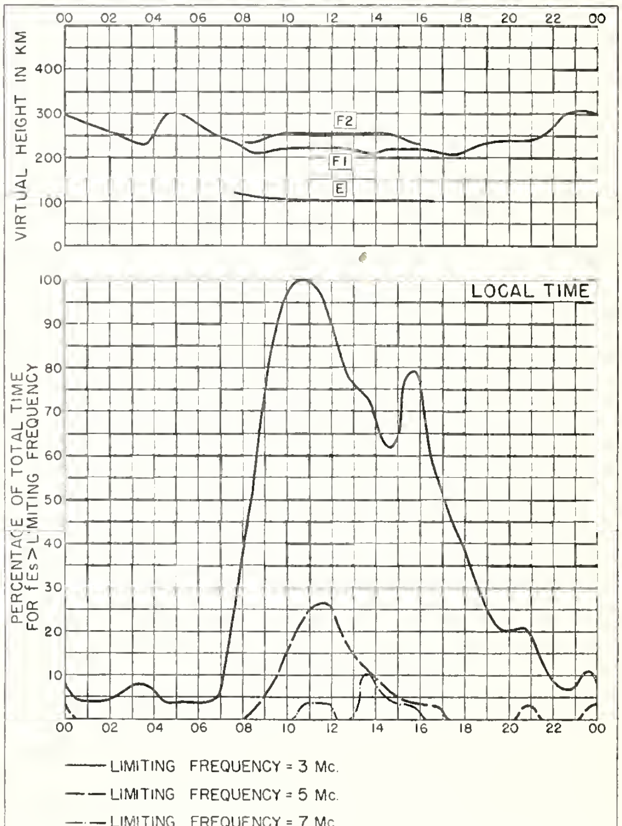

Fig. 72. YAMAGAWA, JAPAN JANUARY 1952

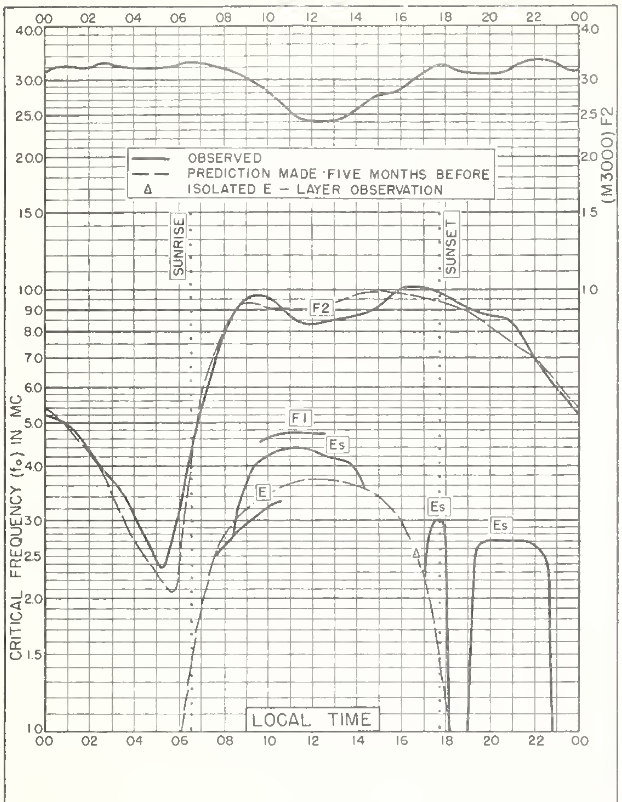

Fig. 73. GUAM I.
13.6°N, 144.9°E JANUARY 1952

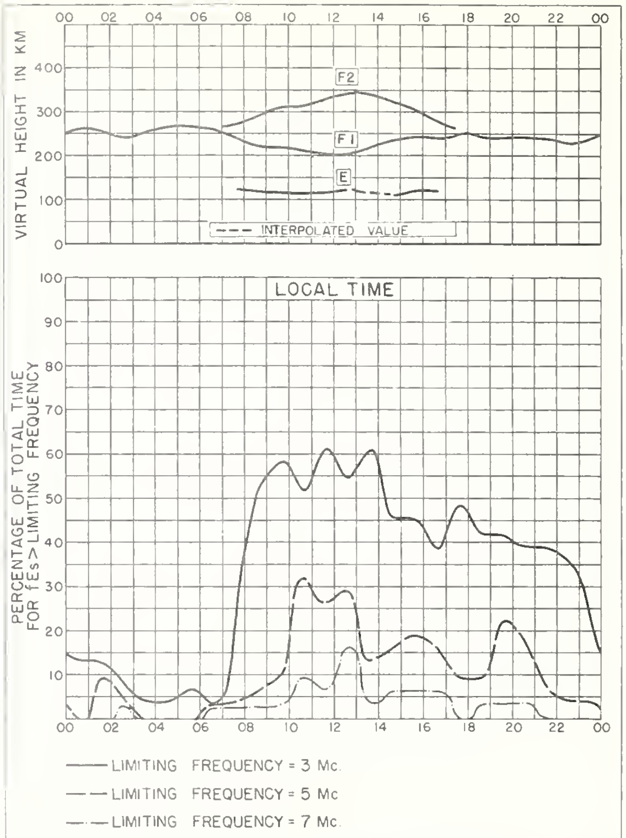

Fig. 74. GUAM I. JANUARY 1952

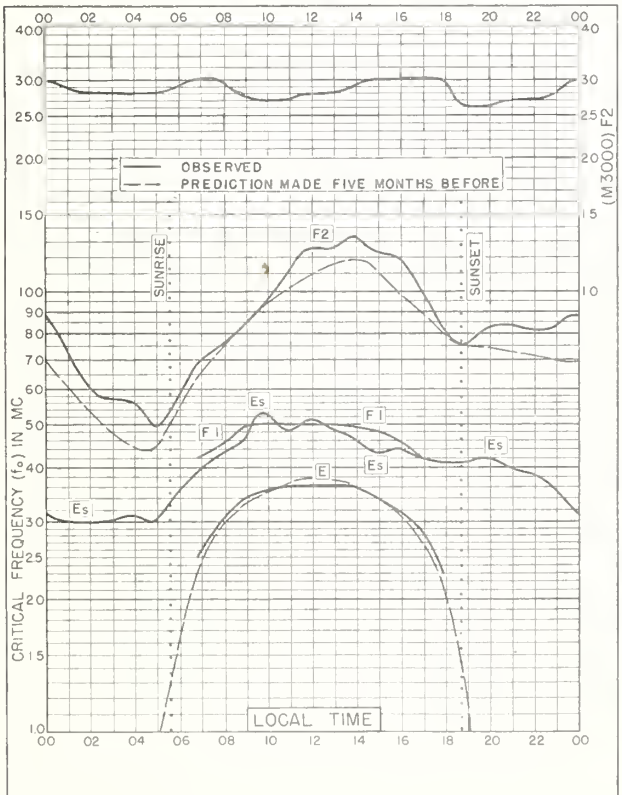

Fig 75. RAROTONGA I.
21.3°S, 159.8°W JANUARY 1952

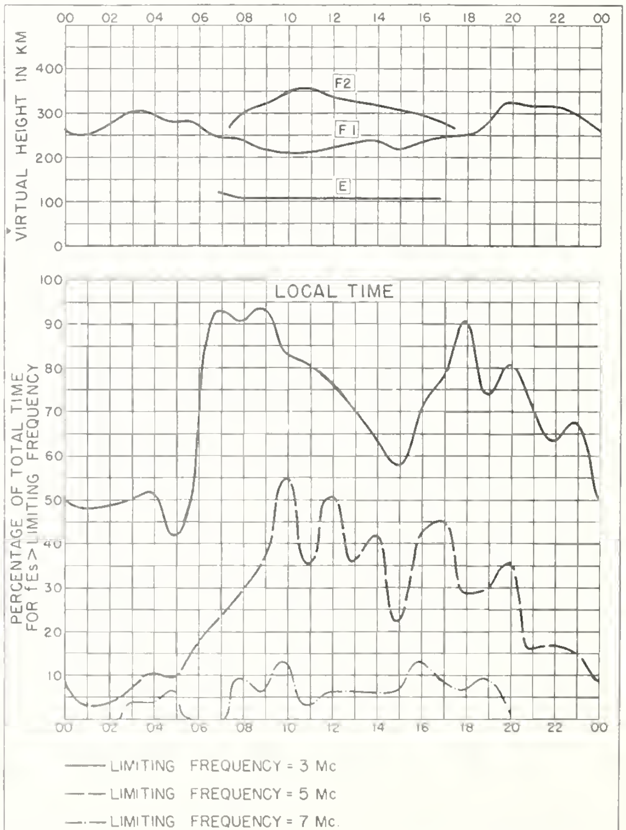

Fig. 76. RAROTONGA I. JANUARY 1952

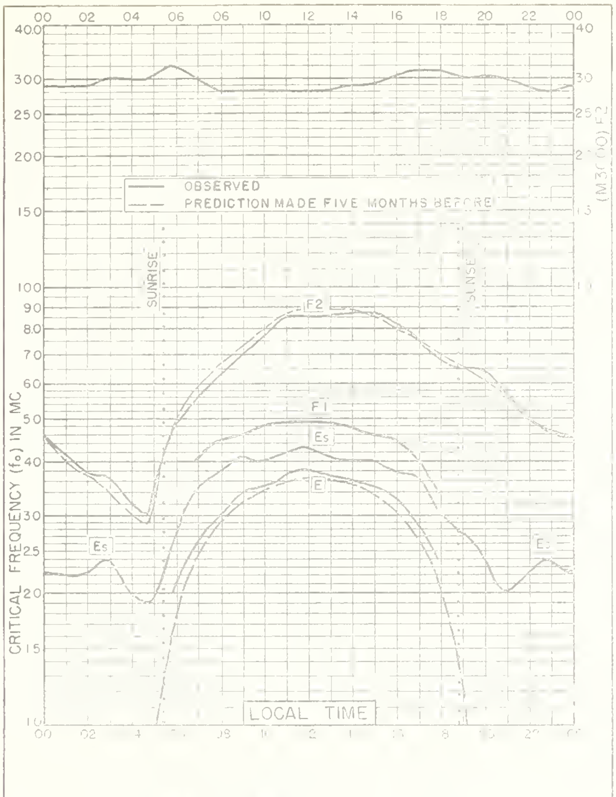

Fig. 77. JOHANNESBURG, U. OF S. AFRICA
26.2°S, 28.1°E JANUARY 1952

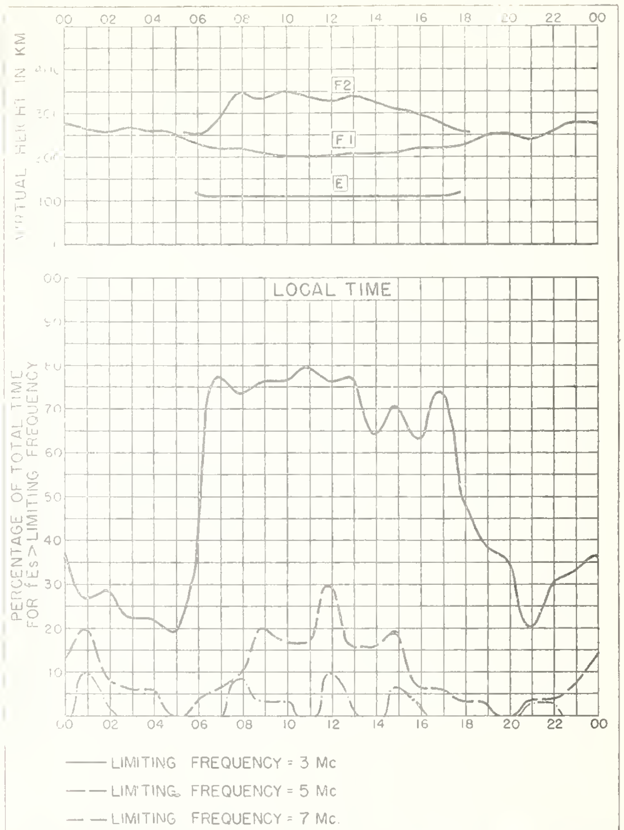

Fig. 78. JOHANNESBURG, U. OF S. AFRICA JANUARY 1952

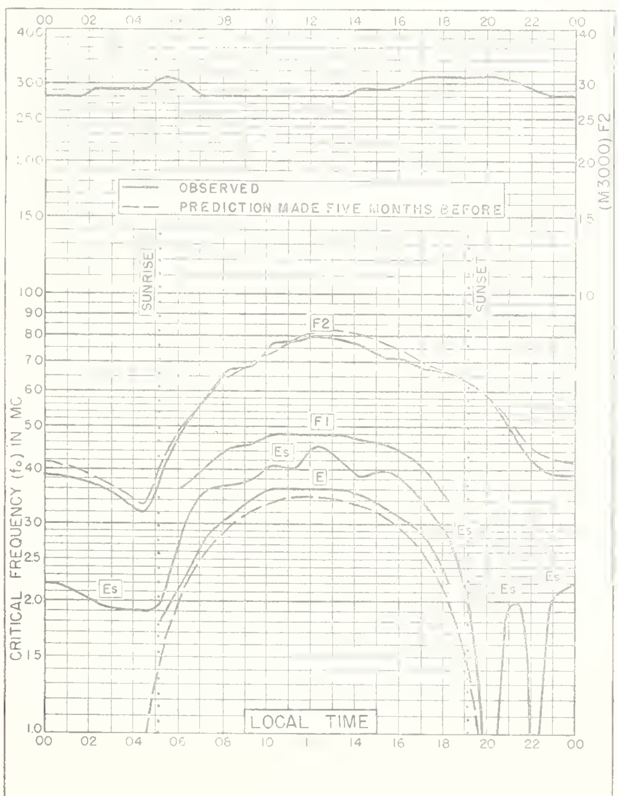

Fig. 79. CAPETOWN, U. OF S. AFRICA
34.2°S, 18.3°E JANUARY 1952

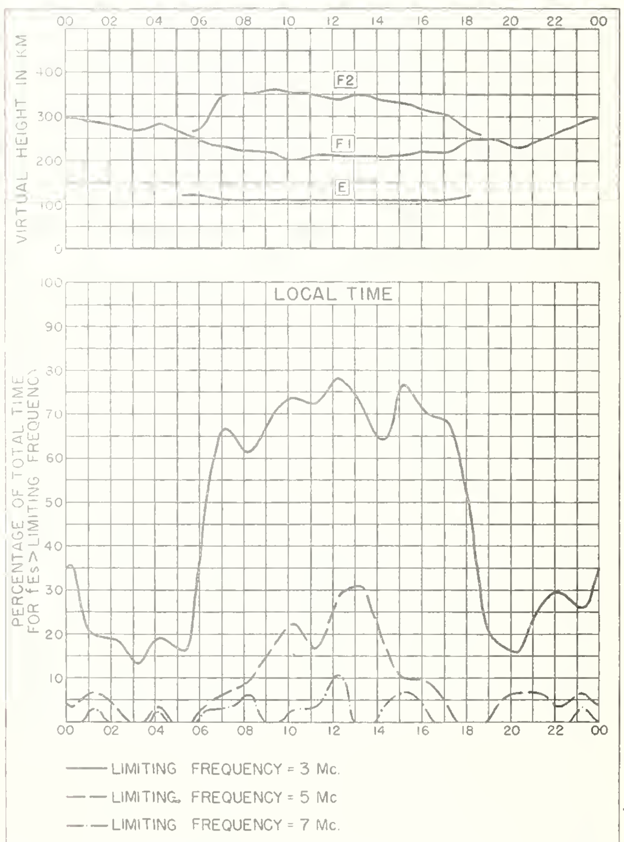

Fig. 80. CAPETOWN, U. OF S. AFRICA JANUARY 1952

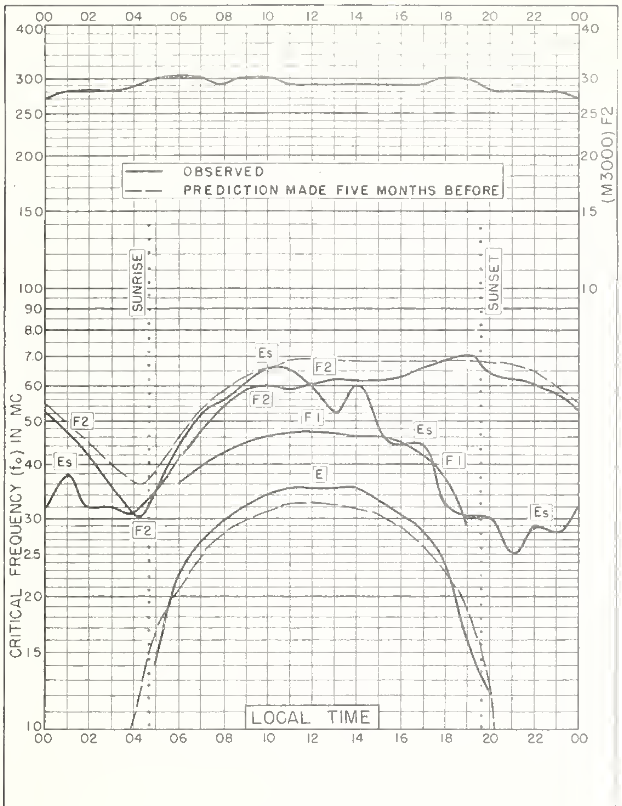

Fig. 81. CHRISTCHURCH, N. Z.
43.6°S, 172.7°E JANUARY 1952

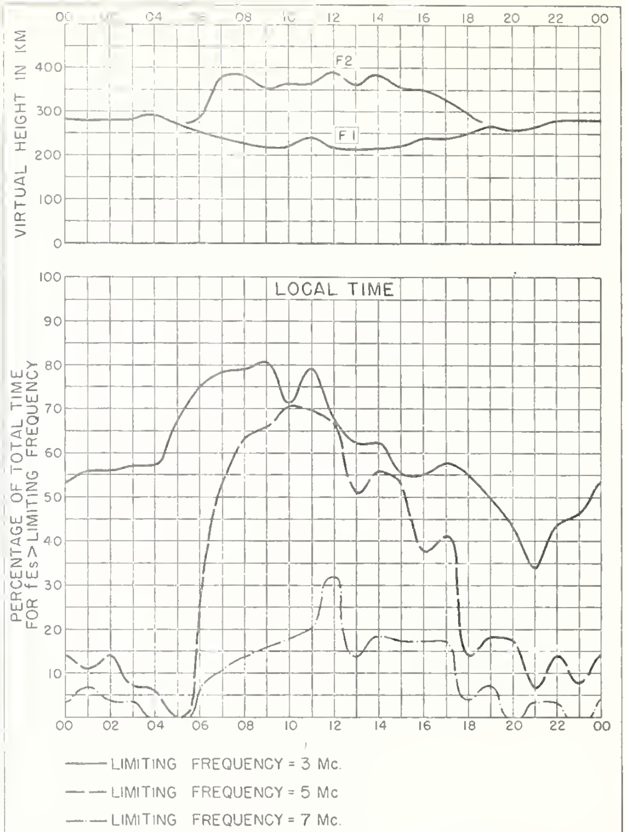

Fig. 82. CHRISTCHURCH, N. Z. JANUARY 1952

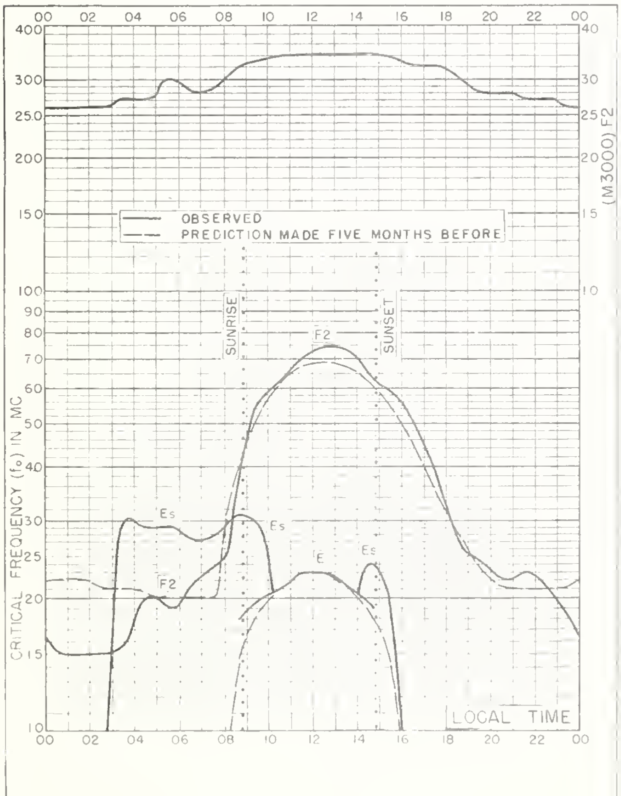

Fig. 83. INVERNESS, SCOTLAND
57.4°N, 4.2°W DECEMBER 1951

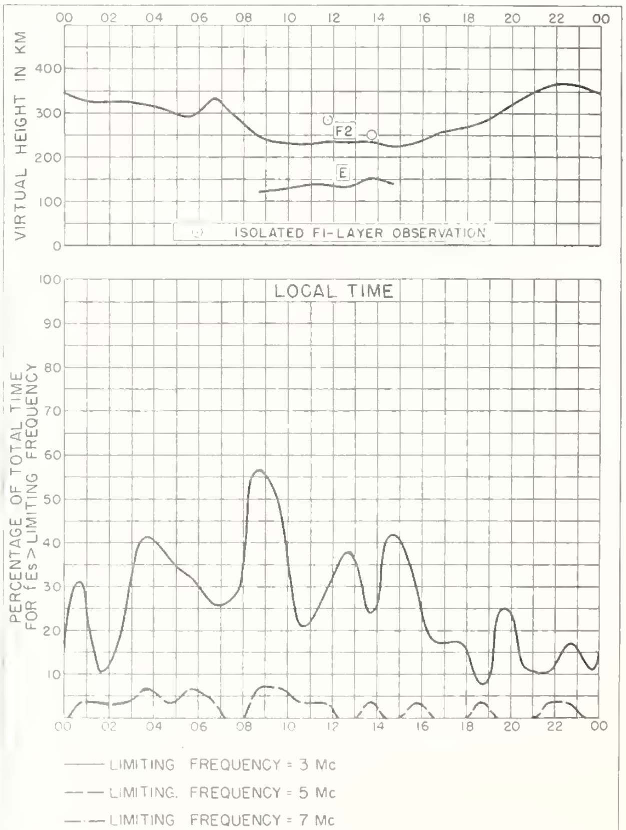

Fig. 84. INVERNESS, SCOTLAND DECEMBER 1951

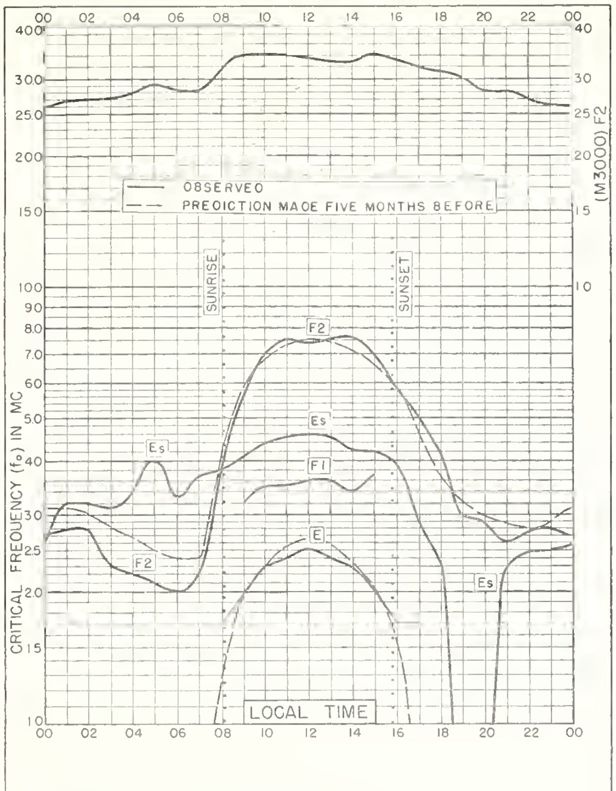

Fig. 85. SLOUGH, ENGLAND
51.5°N, 0.6°W DECEMBER 1951

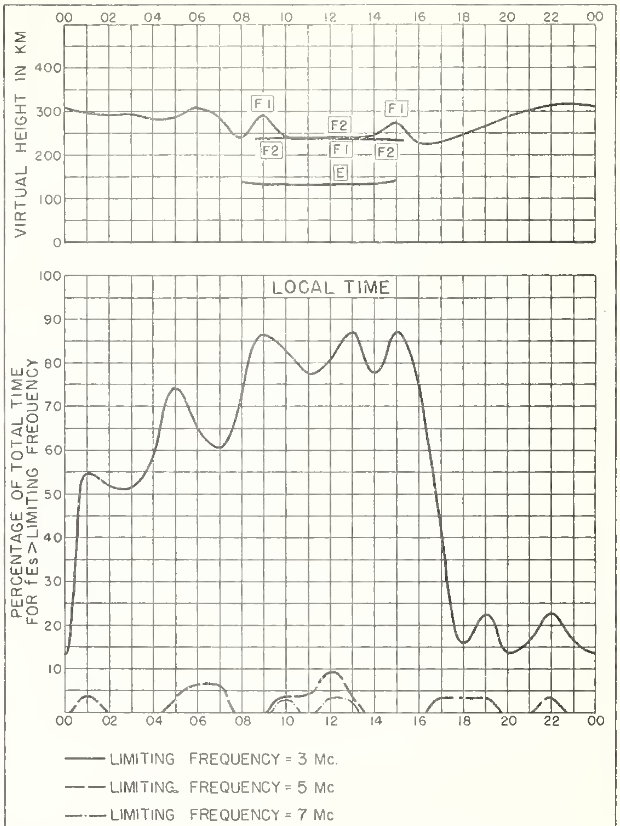

Fig. 86. SLOUGH, ENGLAND DECEMBER 1951

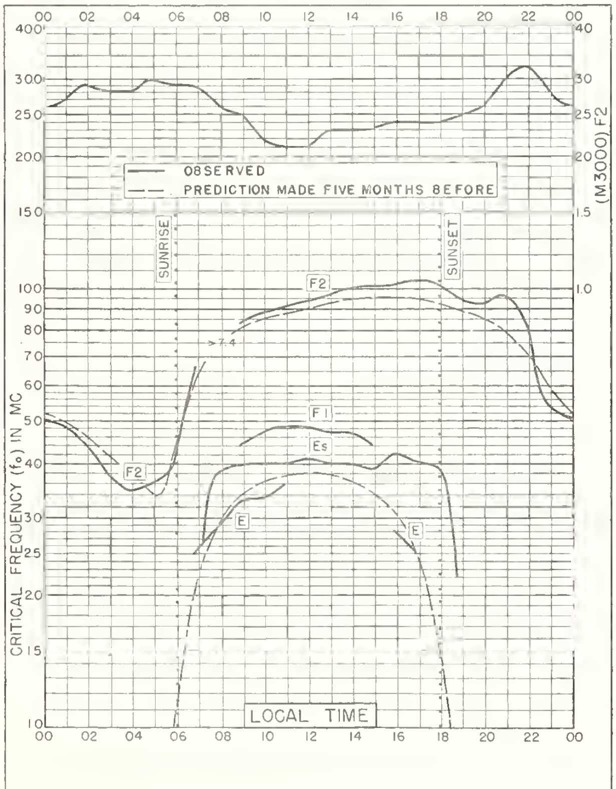

Fig. 87. SINGAPORE, BRIT. MALAYA
1.3°N, 103.8°E DECEMBER 1951

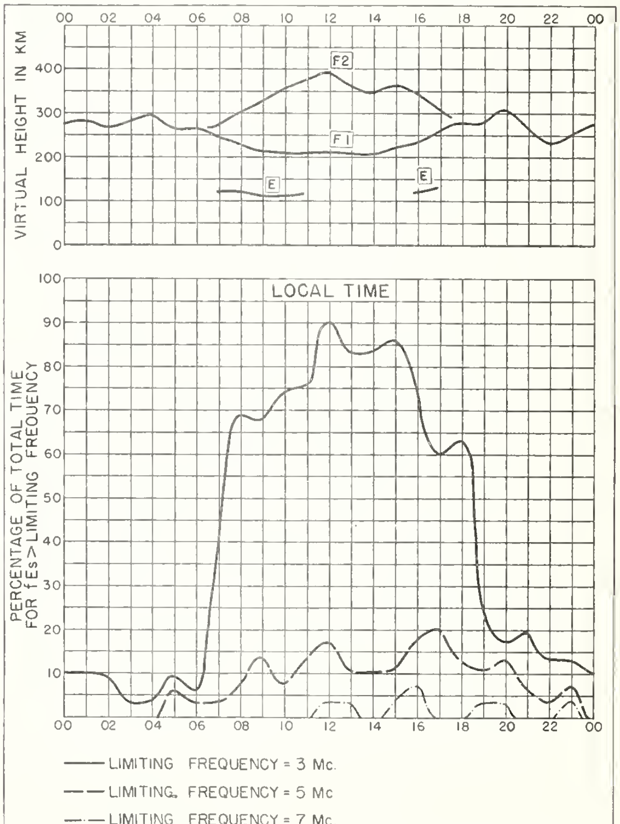

Fig. 88. SINGAPORE, BRIT. MALAYA DECEMBER 1951

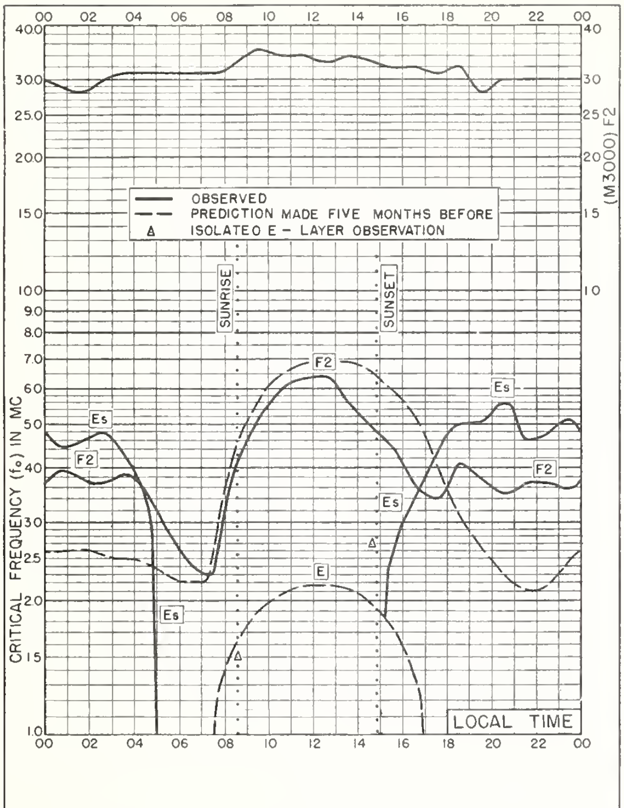

Fig. 89. REYKJAVIK, ICELAND
64.1°N, 21.8°W NOVEMBER 1951

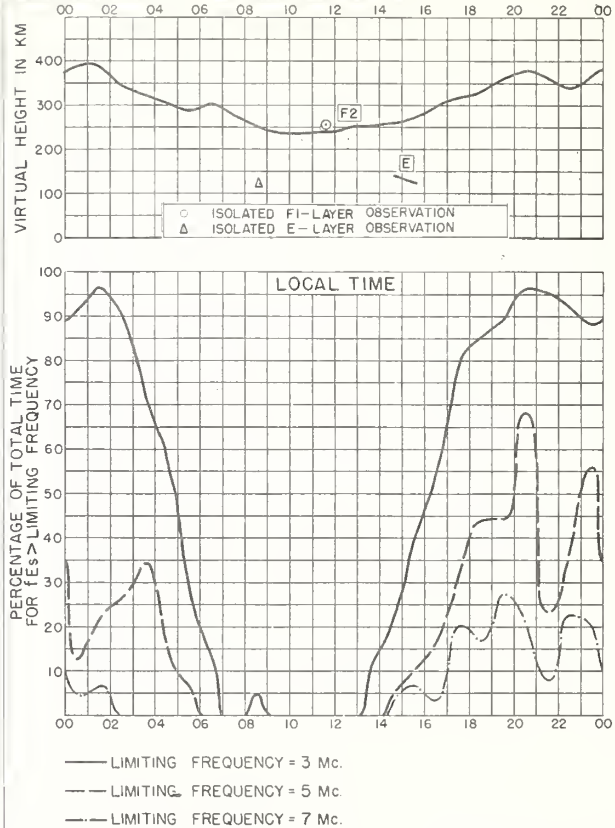

Fig. 90. REYKJAVIK, ICELAND NOVEMBER 1951

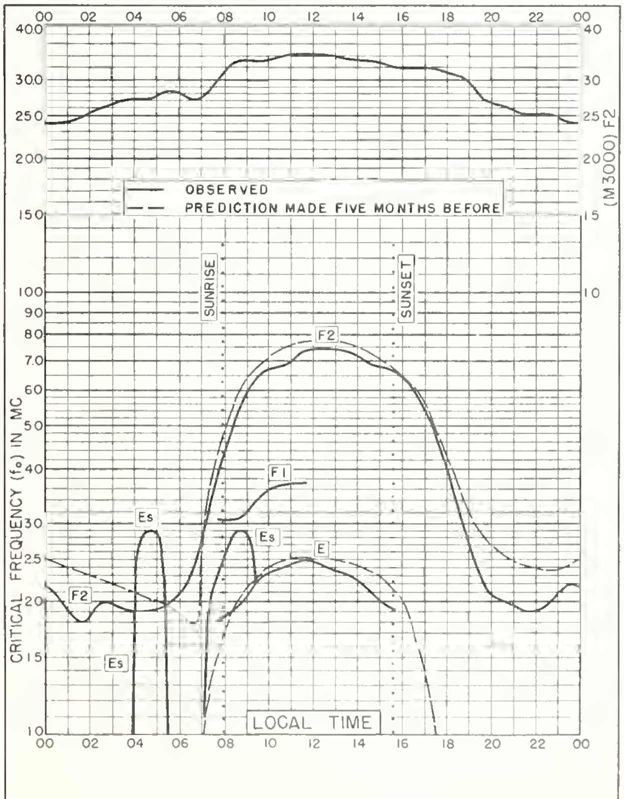

Fig 91. INVERNESS, SCOTLAND
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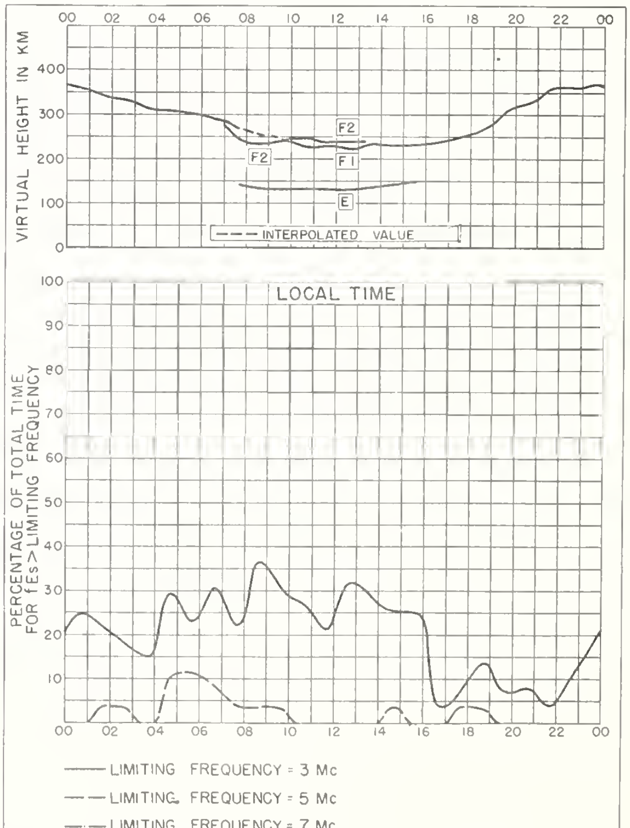

Fig. 92. INVERNESS, SCOTLAND NOVEMBER 1951

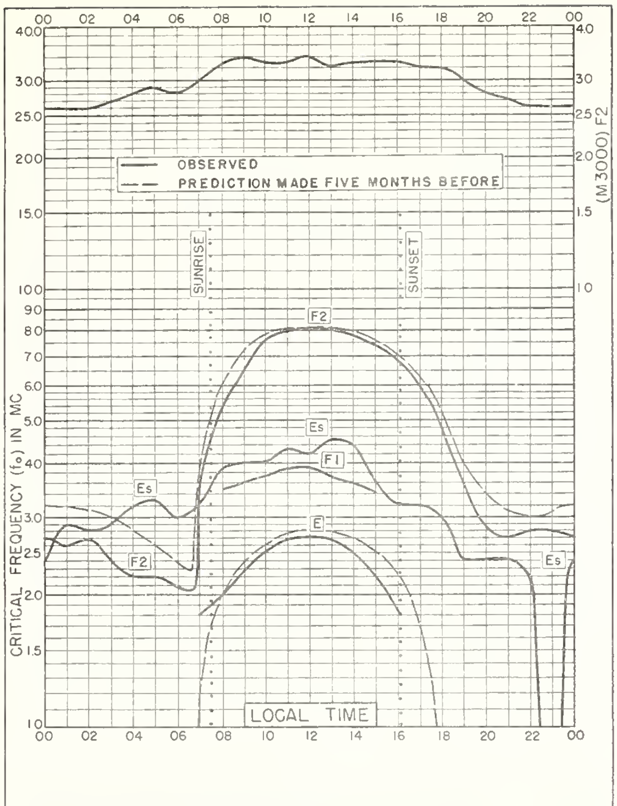

Fig. 93. SLOUGH, ENGLAND
51.5°N, 0.6°W NOVEMBER 1951

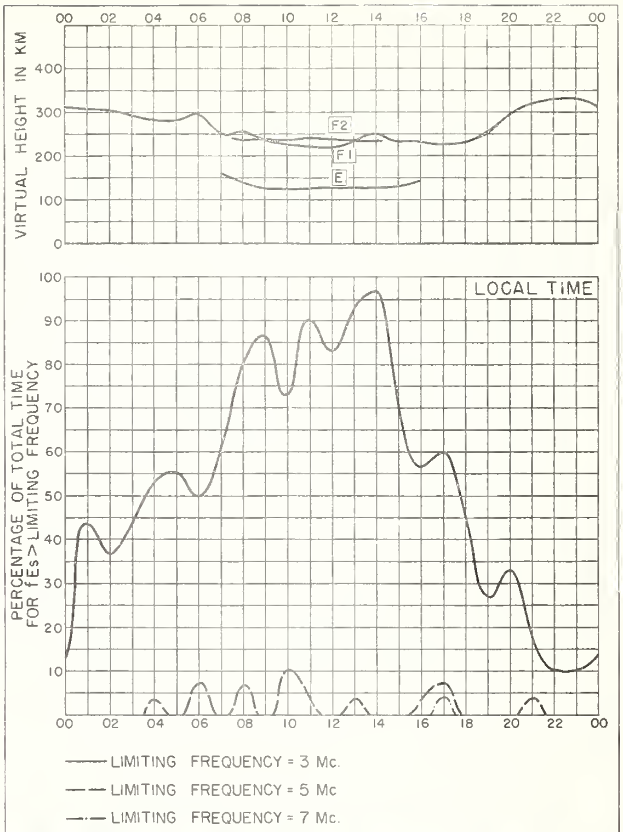

Fig. 94. SLOUGH, ENGLAND NOVEMBER 1951

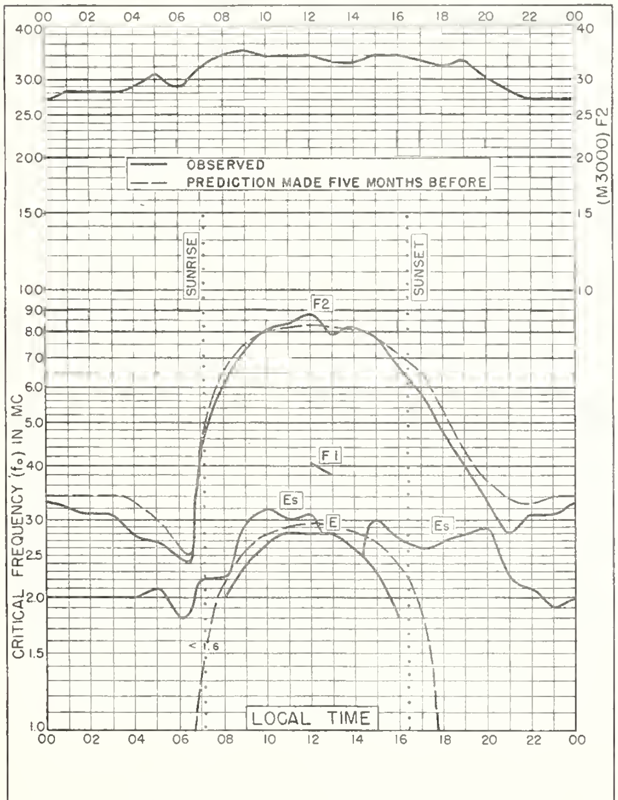

Fig. 95. FRIBOURG, GERMANY
48.1°N, 7.8°E NOVEMBER 1951

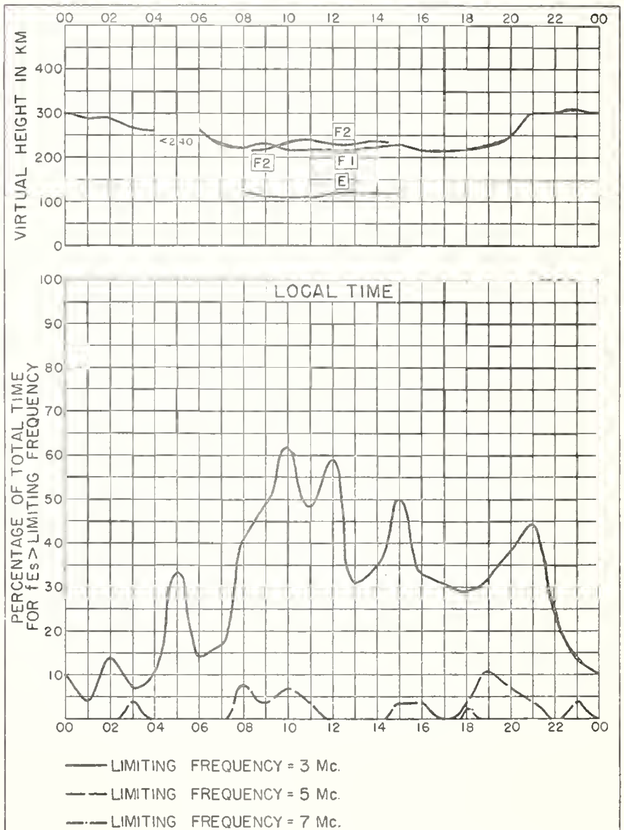

Fig. 96. FRIBOURG, GERMANY NOVEMBER 1951

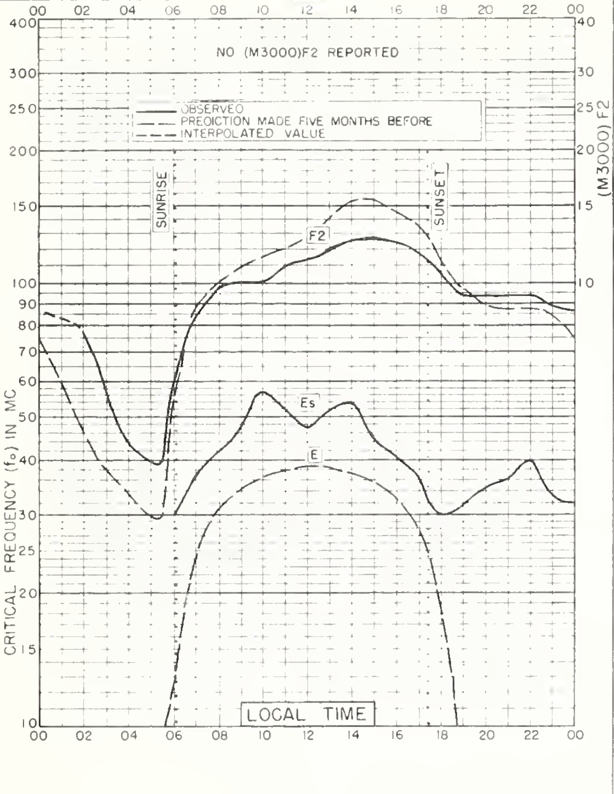

Fig. 97. DJIBOUTI, FRENCH SOMALILAND
11.5°N, 43.1°E NOVEMBER 1951

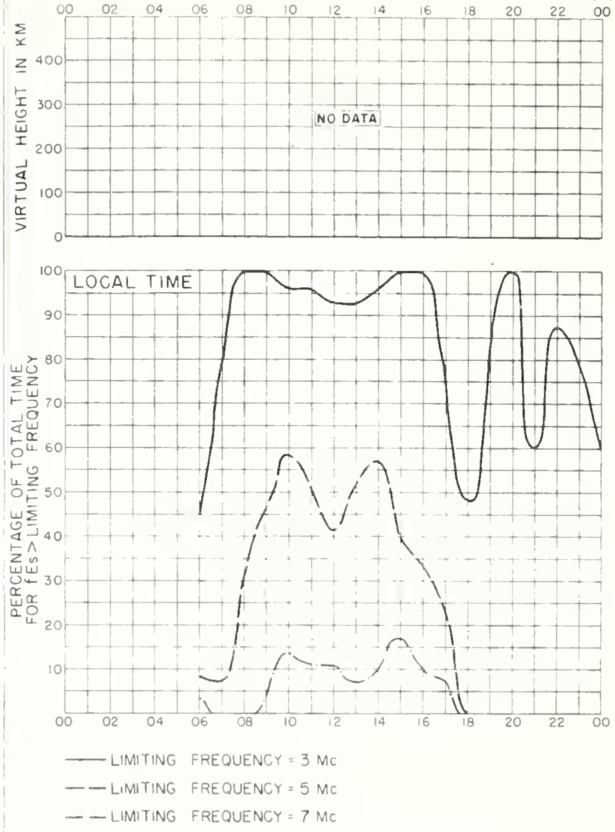

Fig 98. DJIBOUTI, FRENCH SOMALILAND NOVEMBER 1951

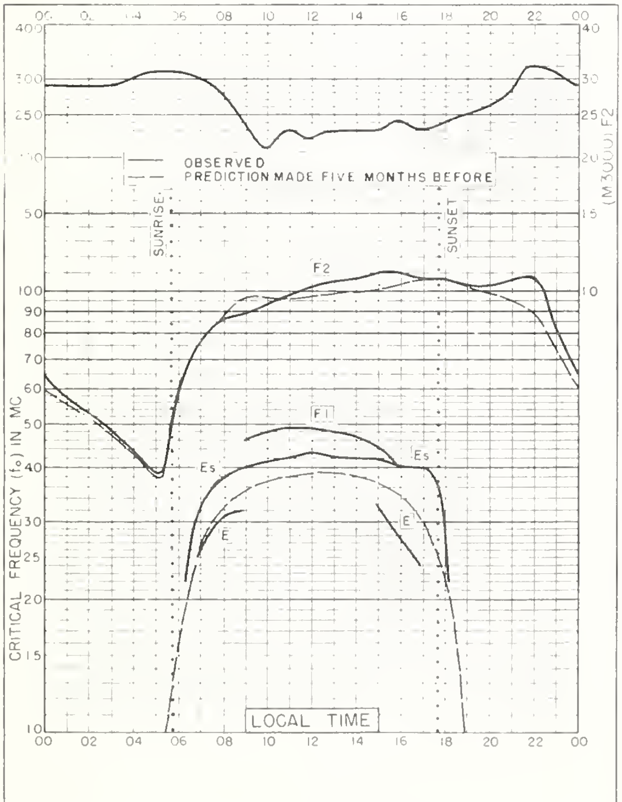

Fig. 99. SINGAPORE, BRIT. MALAYA
1.3°N, 103.8°E NOVEMBER 1951

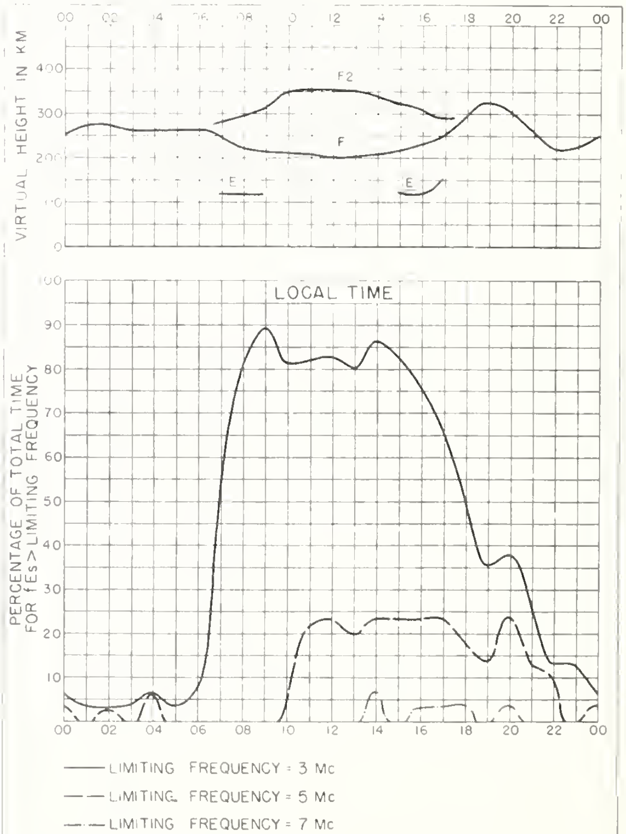

Fig. 100. SINGAPORE, BRIT. MALAYA NOVEMBER 1951

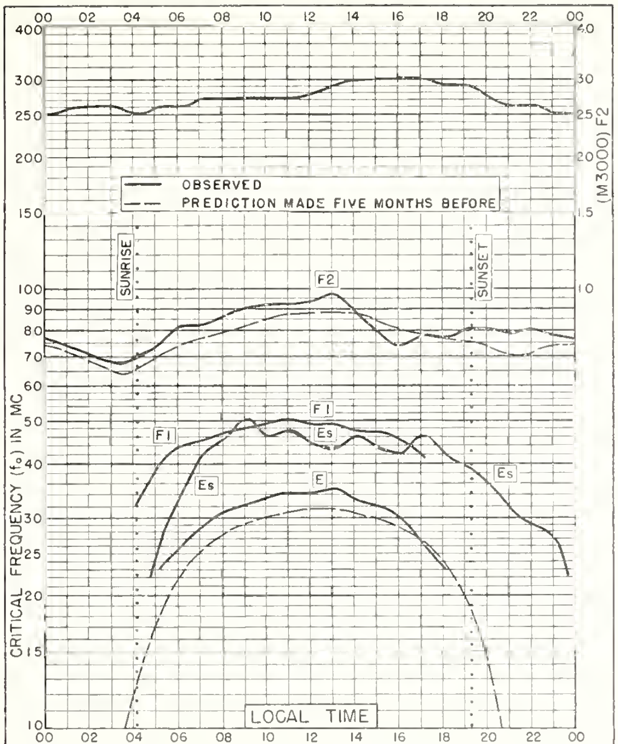

Fig. 101. FALKLAND IS.
51.7°S, 57.8°W NOVEMBER 1951

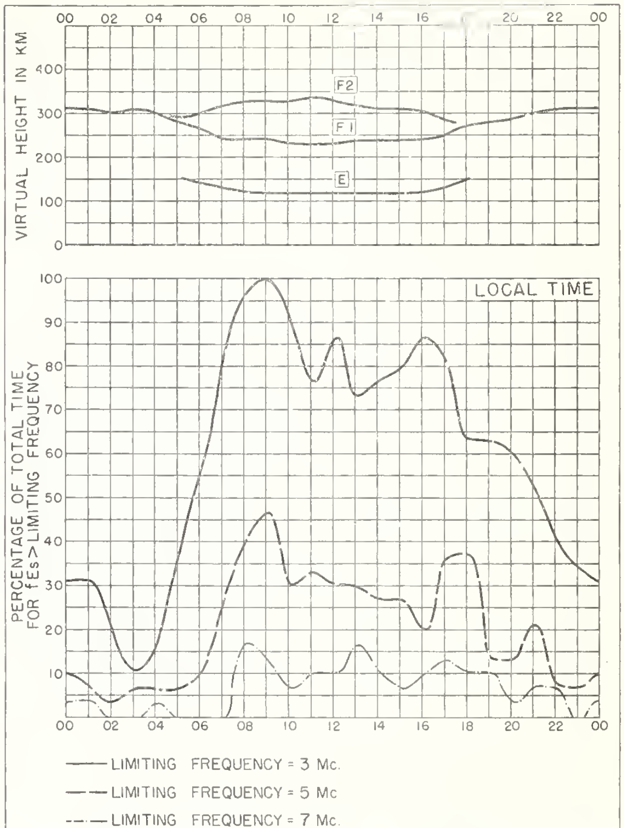

Fig. 102. FALKLAND IS. NOVEMBER 1951

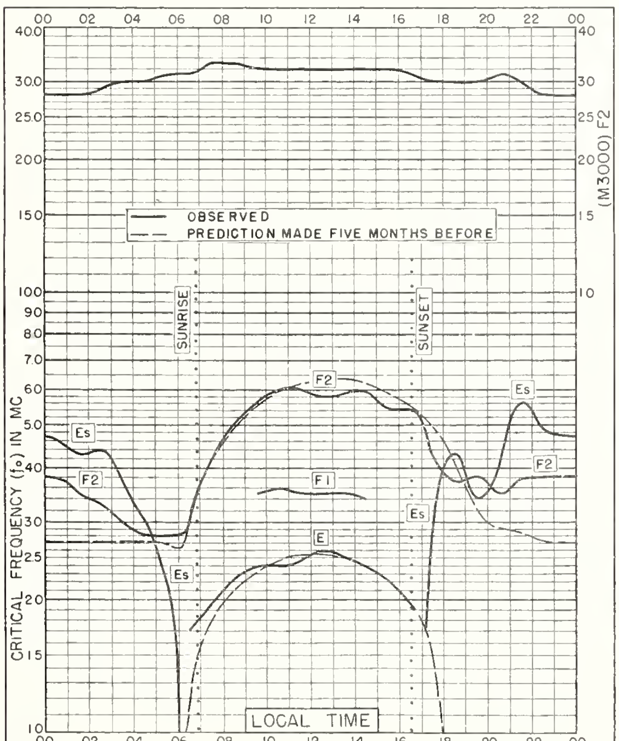

Fig. 103. REYKJAVIK, ICELAND
64.1°N, 21.8°W OCTOBER 1951

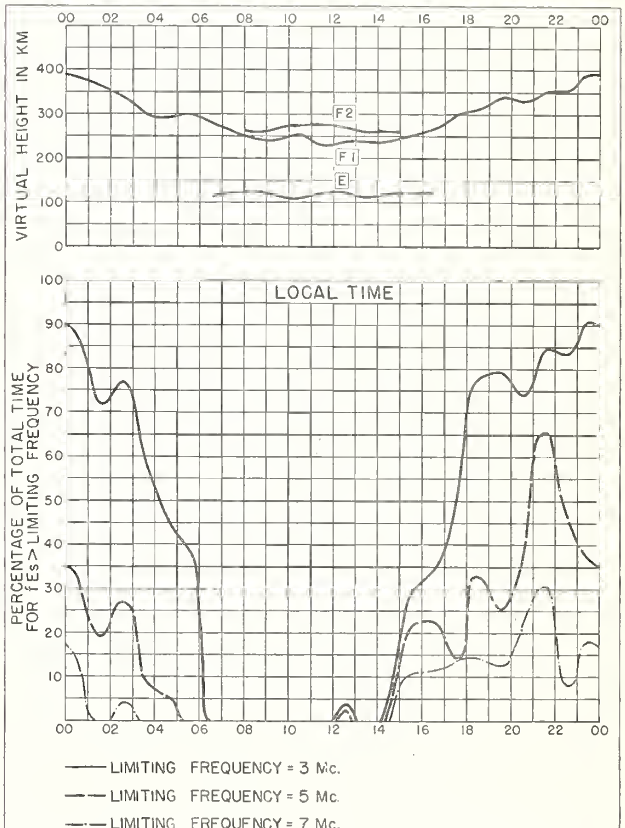

Fig. 104. REYKJAVIK, ICELAND OCTOBER 1951

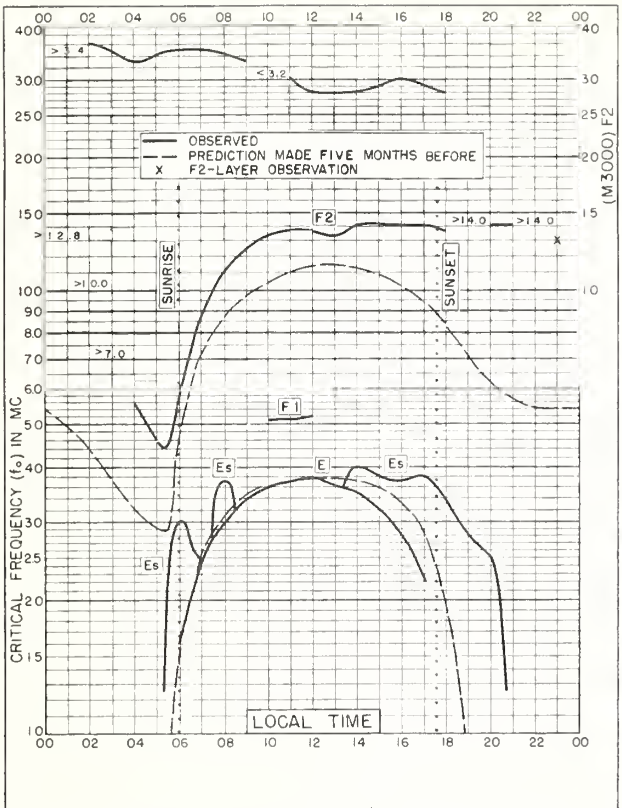

Fig. 105. DAKAR, FRENCH W. AFRICA
14.6°N, 17.4°W OCTOBER 1951

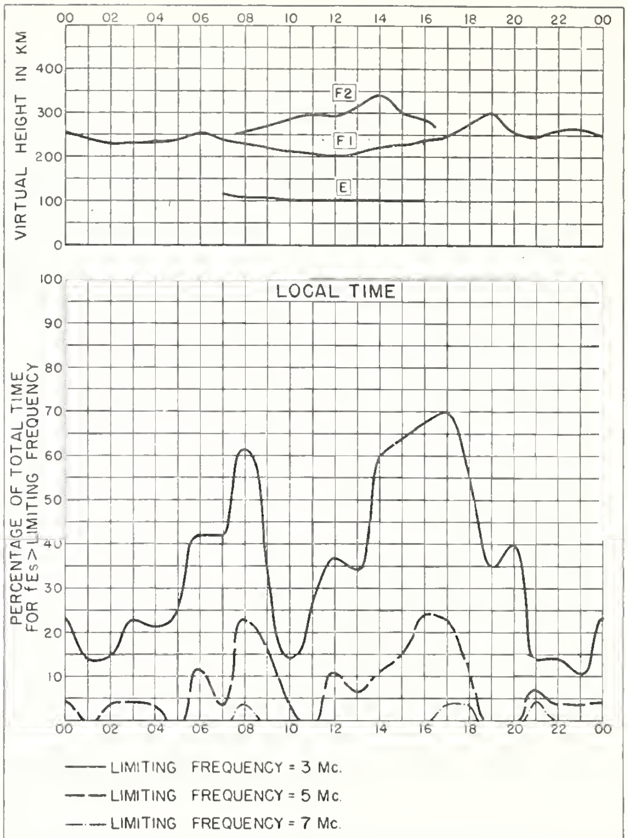

Fig. 106. DAKAR, FRENCH W. AFRICA OCTOBER 1951

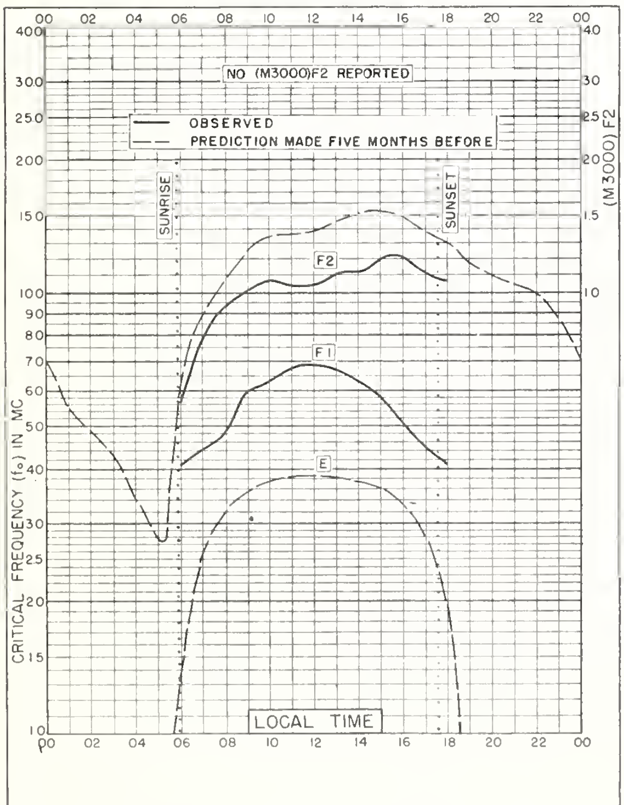

Fig 107. DJIBOUTI, FRENCH SOMALILAND
11.5°N, 43.1°E OCTOBER 1951

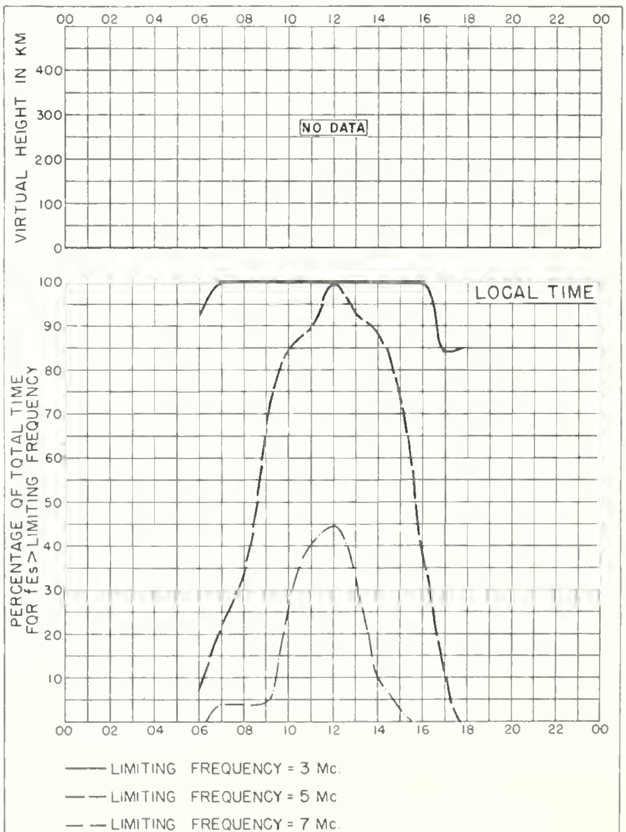

Fig. 108. DJIBOUTI, FRENCH SOMALILAND OCTOBER 1951

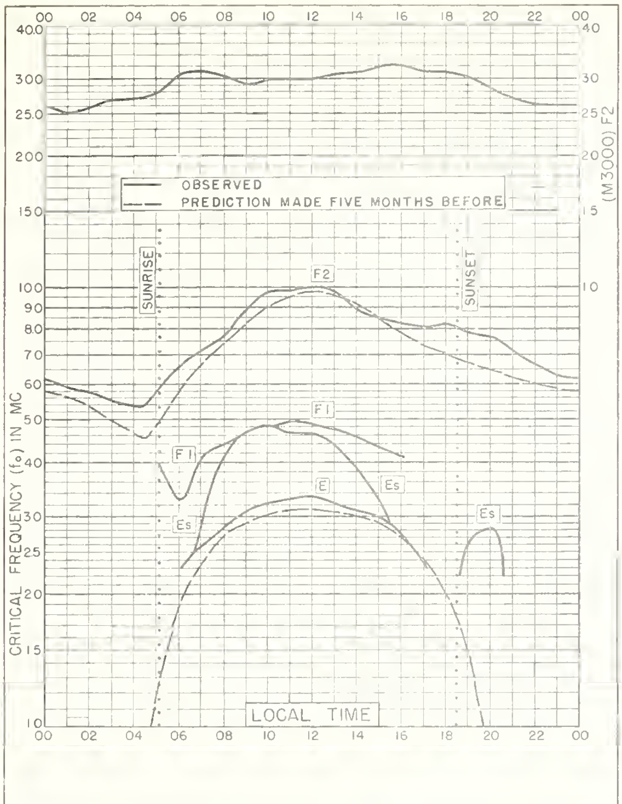

Fig. 109. FALKLAND IS.
51.7°S, 57.8°W OCTOBER 1951

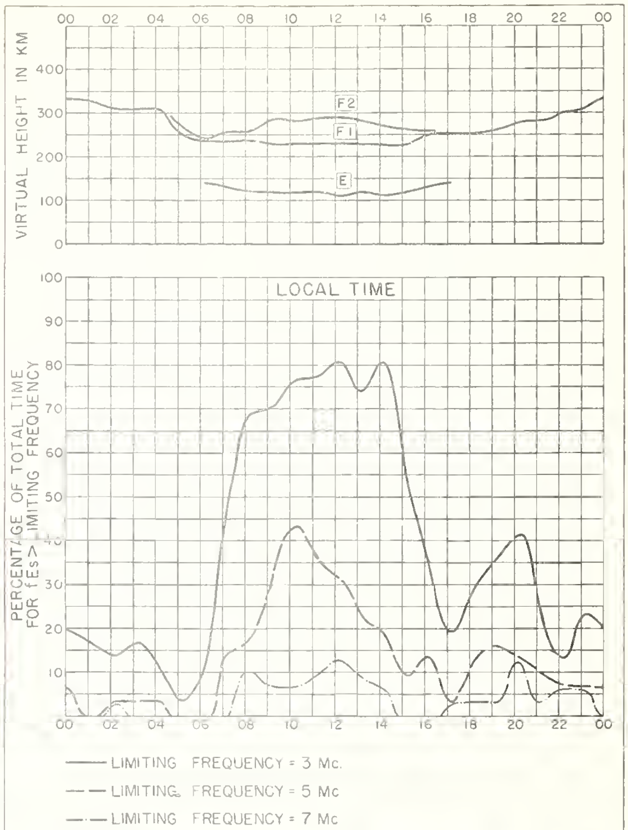

Fig. 110. FALKLAND IS. OCTOBER 1951

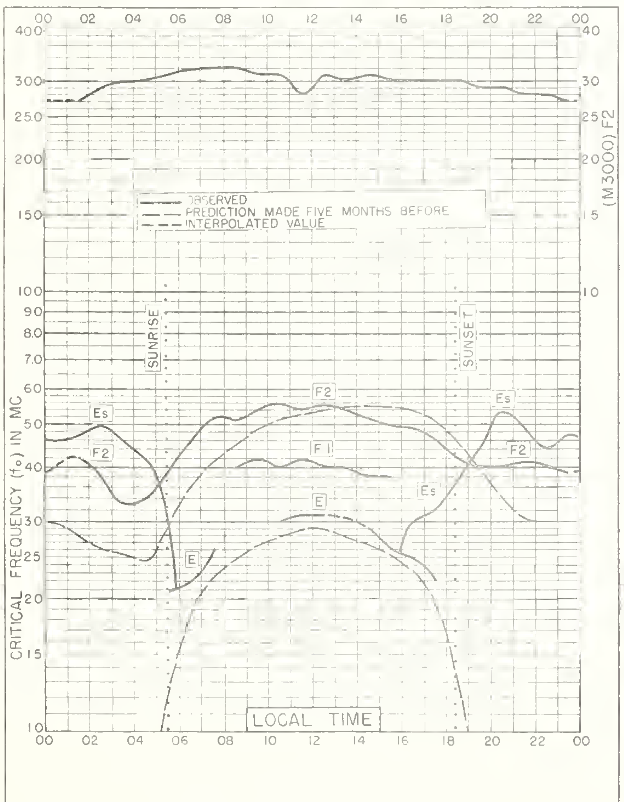

Fig. 111. REYKJAVIK, ICELAND
64.1°N, 21.8°W SEPTEMBER 1951

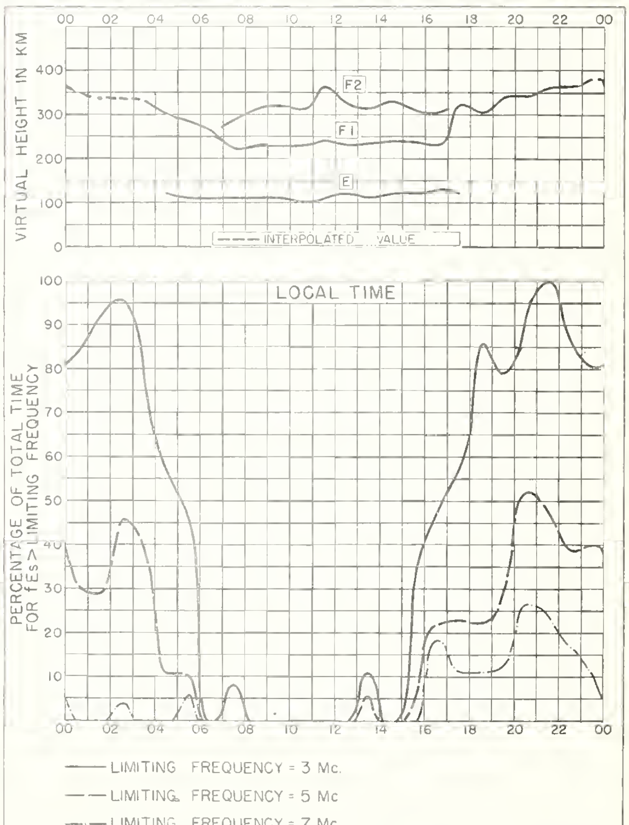

Fig. 112. REYKJAVIK, ICELAND SEPTEMBER 1951

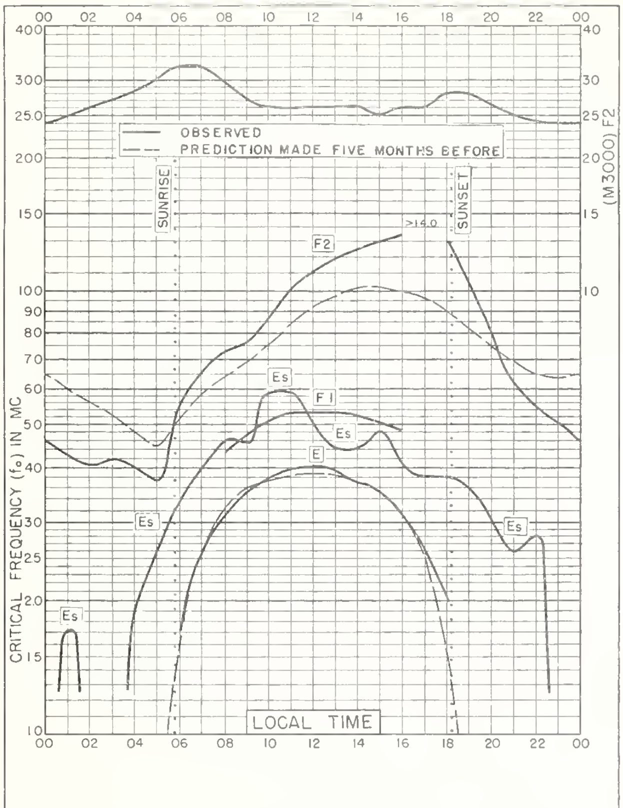

Fig. 113. DAKAR, FRENCH W. AFRICA
14.6°N, 17.4°W AUGUST 1951

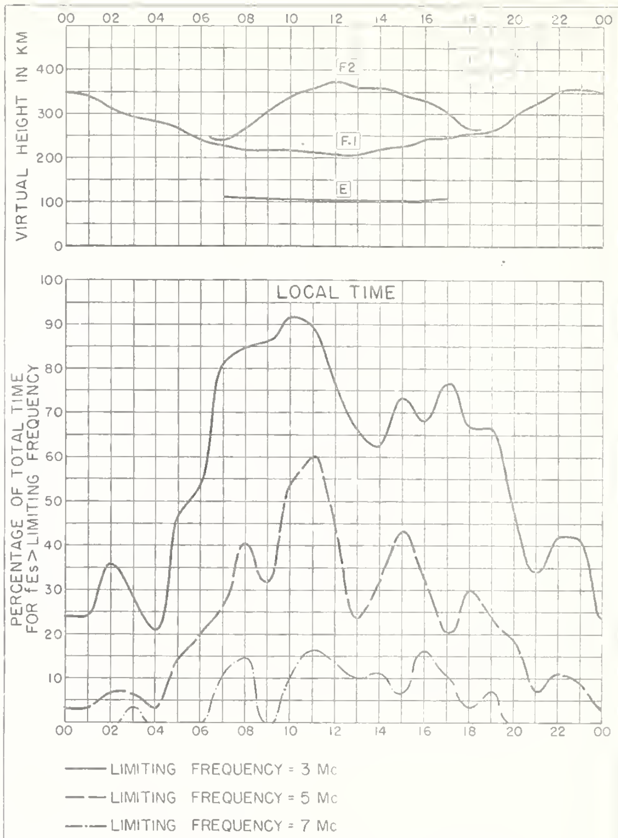

Fig. 114. DAKAR, FRENCH W. AFRICA AUGUST 1951

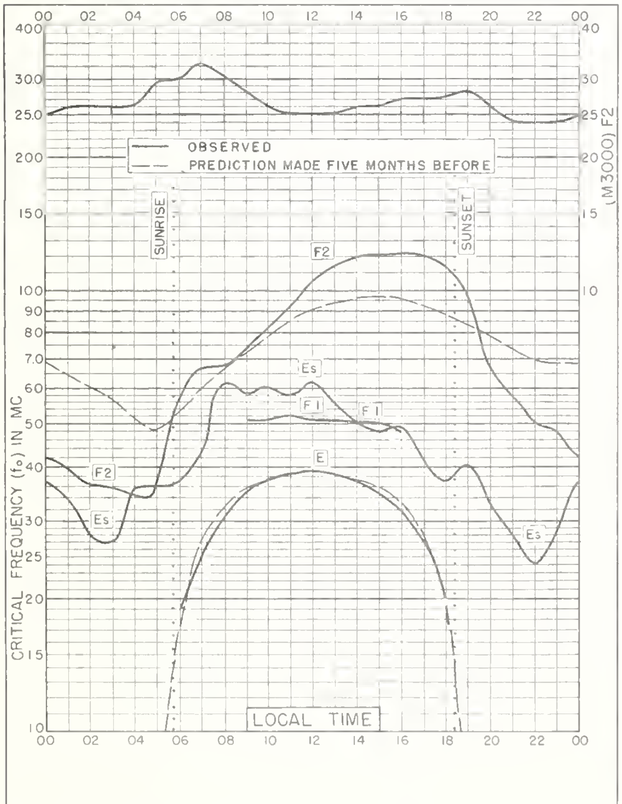

Fig. 115. DAKAR, FRENCH W. AFRICA
14.6°N, 17.4°W JULY 1951

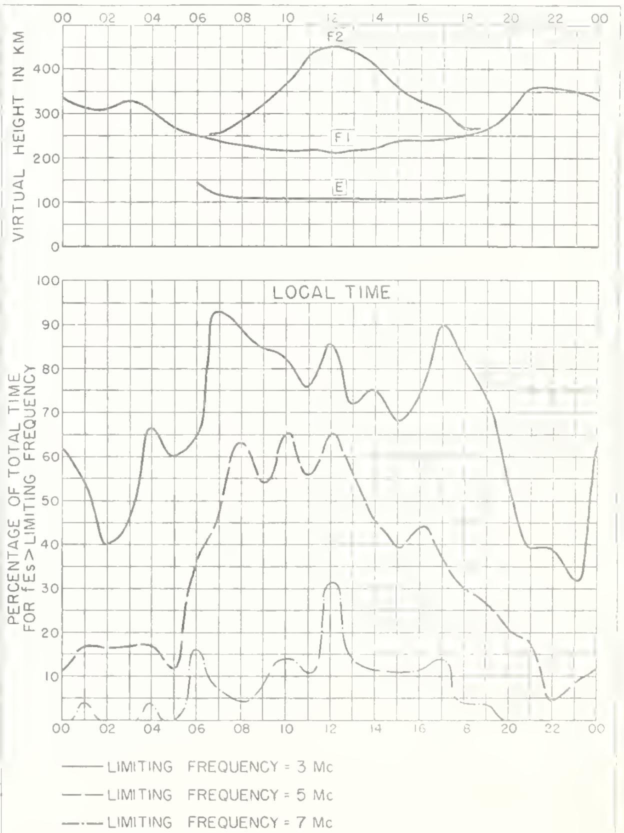

Fig. 116. DAKAR, FRENCH W. AFRICA JULY 1951

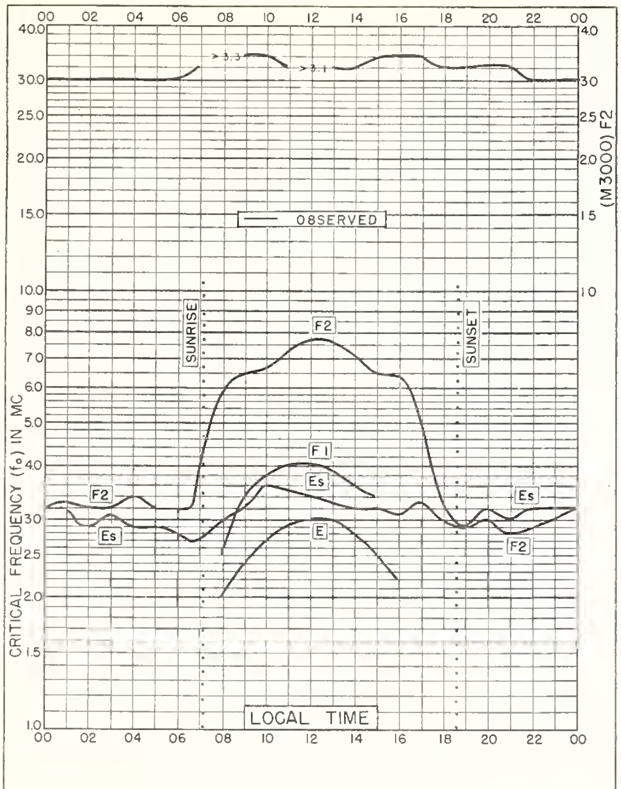

Fig. 117. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W DECEMBER 1942

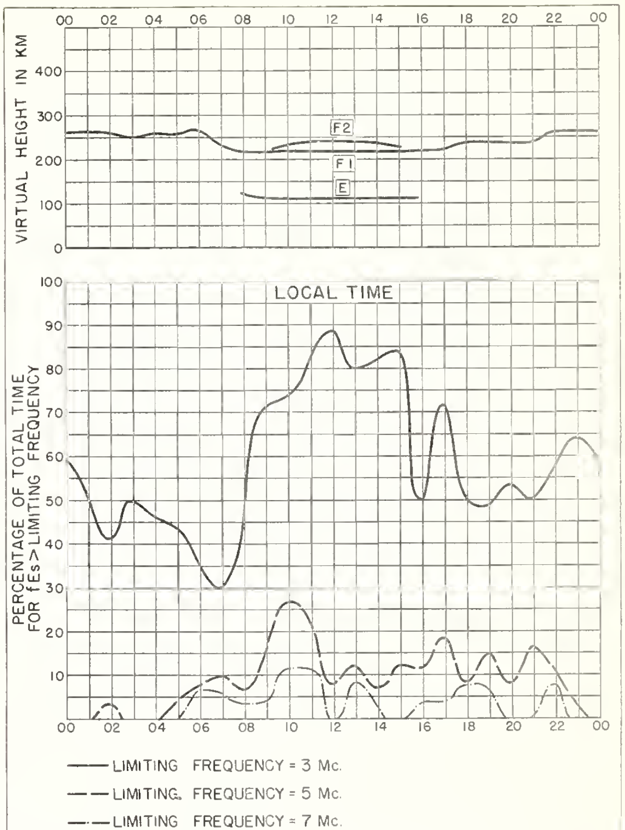

Fig. 118. SAN FRANCISCO, CALIFORNIA DECEMBER 1942

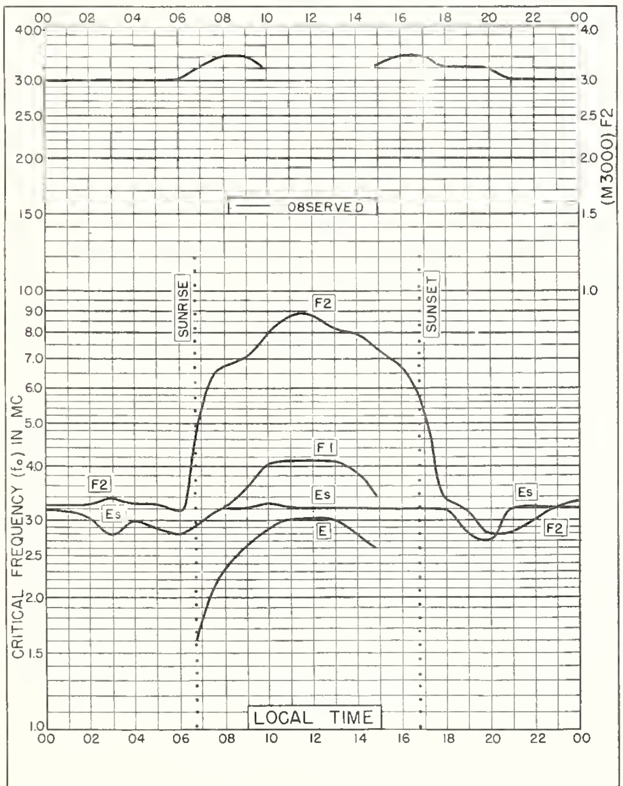

Fig. 119. SAN FRANCISCO, CALIFORNIA
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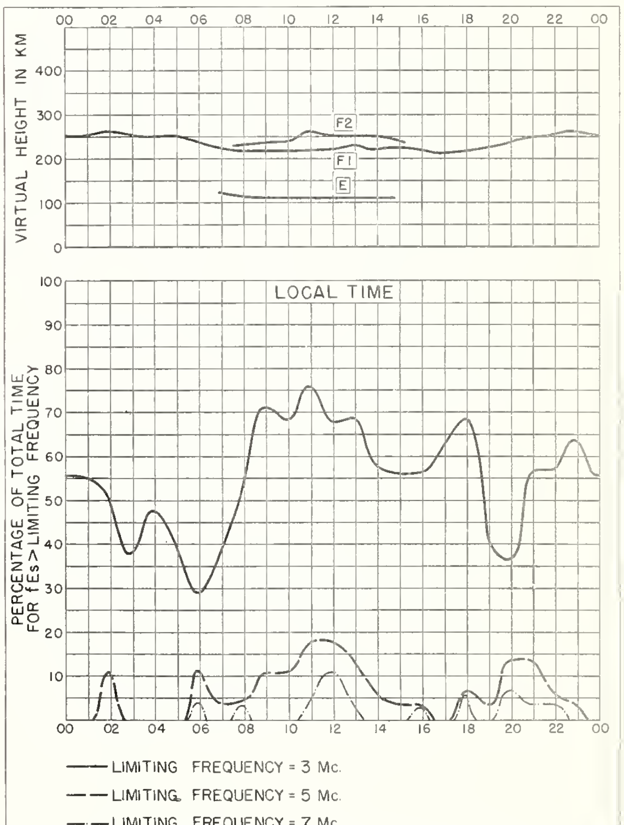

Fig. 120. SAN FRANCISCO, CALIFORNIA NOVEMBER 1942

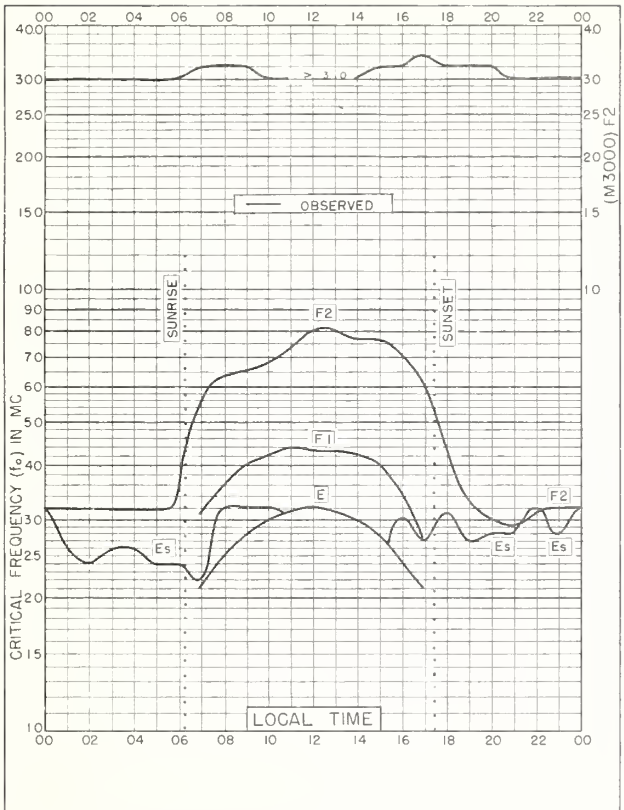

Fig. 121. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W OCTOBER 1942

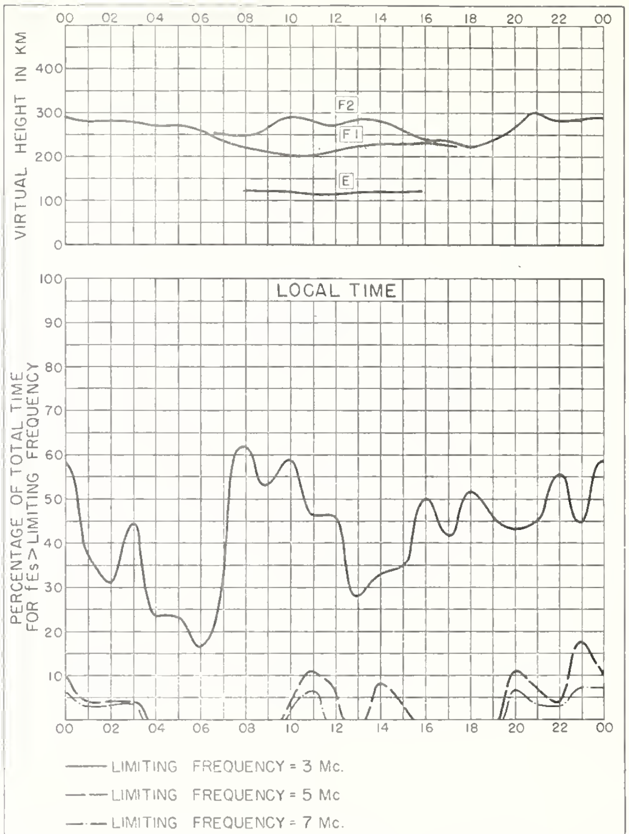

Fig. 122. SAN FRANCISCO, CALIFORNIA OCTOBER 1942

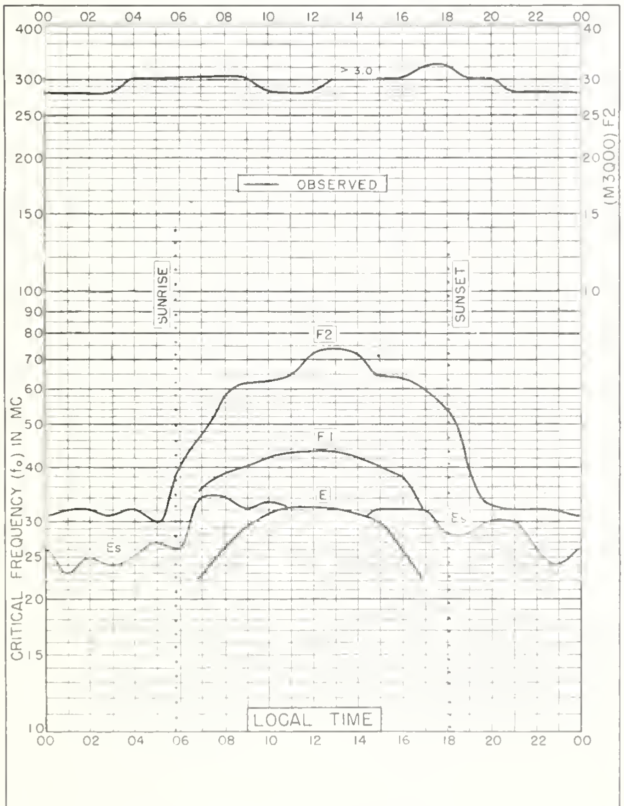

Fig 123. SAN FRANCISCO, CALIFORNIA
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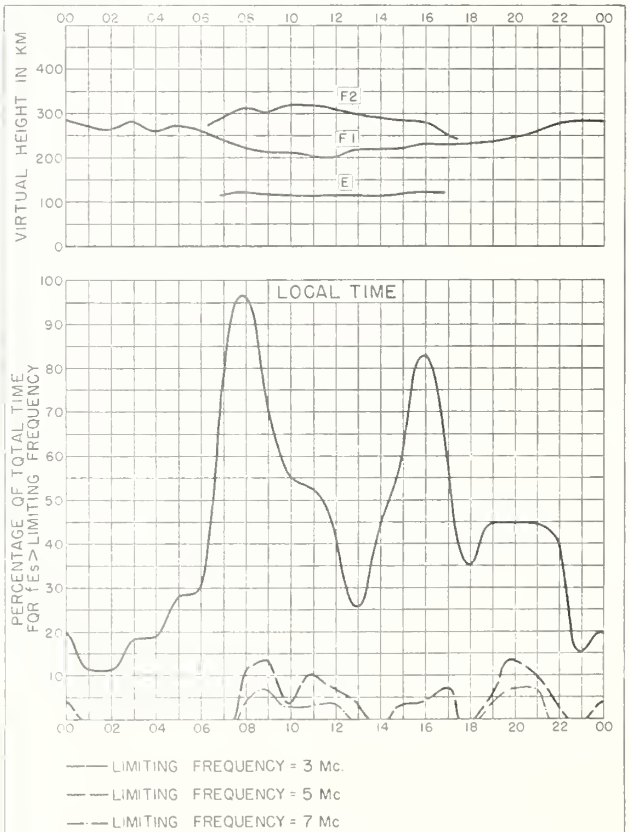

Fig. 124. SAN FRANCISCO, CALIFORNIA SEPTEMBER 1942

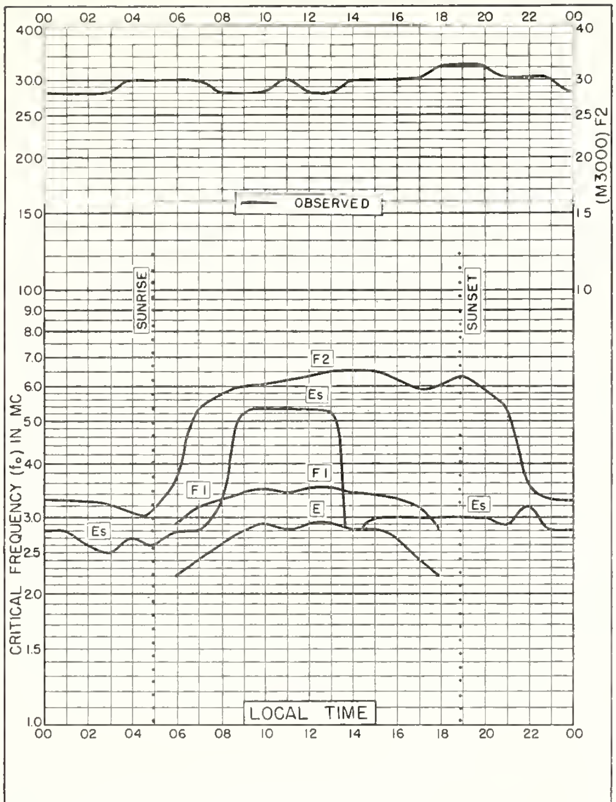

Fig. 125. SAN FRANCISCO, CALIFORNIA
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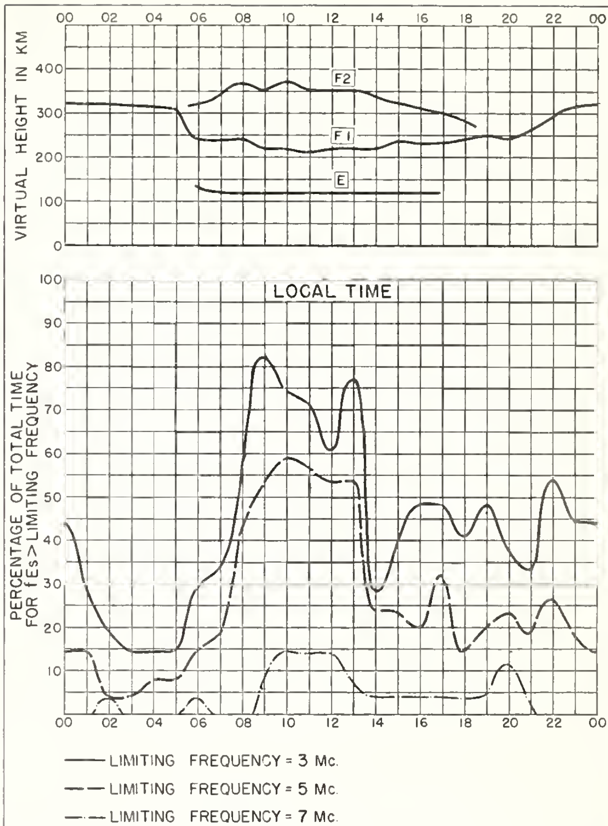

Fig. 126. SAN FRANCISCO, CALIFORNIA MAY 1942

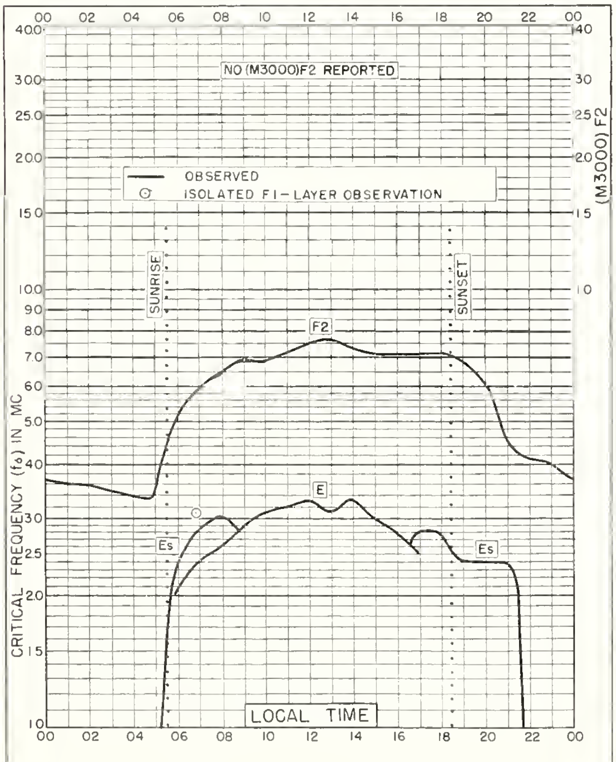

Fig. 127. SAN FRANCISCO CALIFORNIA
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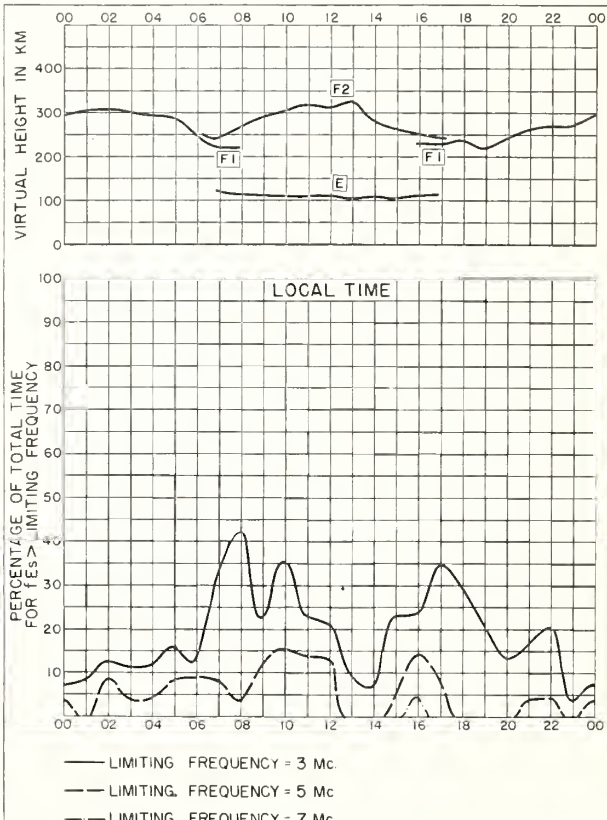

Fig. 128. SAN FRANCISCO, CALIFORNIA APRIL 1942

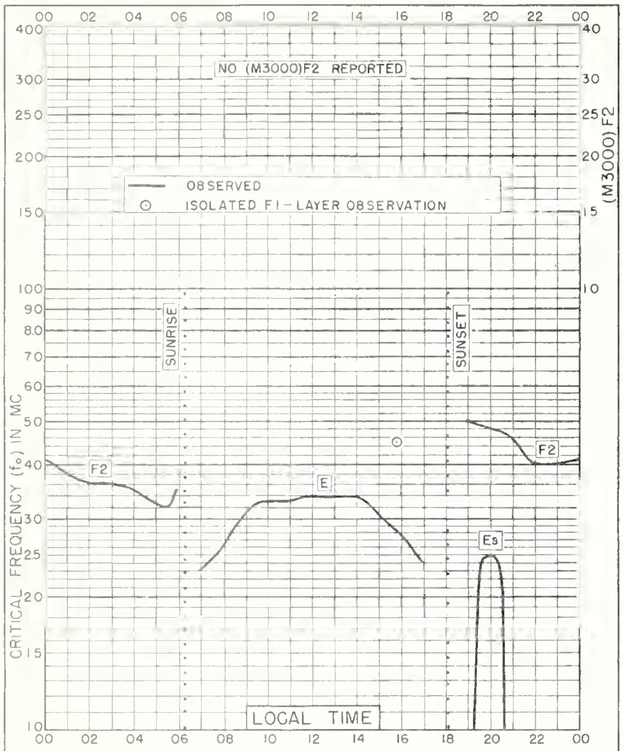

Fig 129. SAN FRANCISCO, CALIFORNIA
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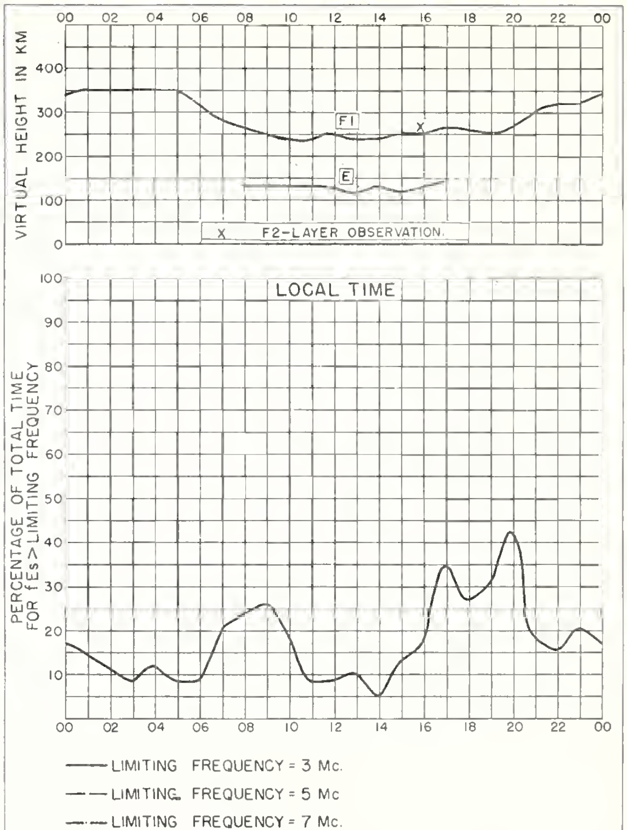
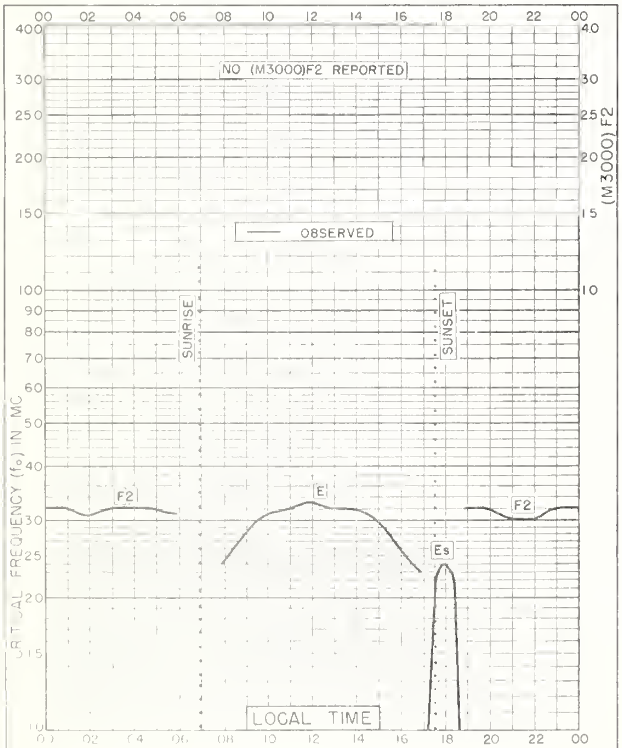


Fig 130. SAN FRANCISCO, CALIFORNIA MARCH 1942



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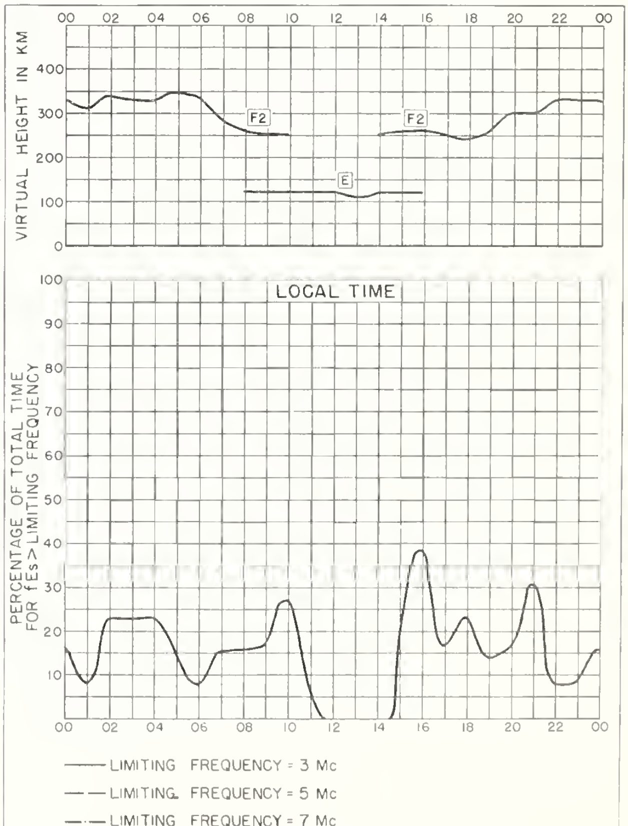

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CRPL and IRPL Reports

[A list of CRPL Section Reports is available from the Central Radio Propagation Laboratory upon request]

Daily:

Radio disturbance warnings, every half hour from broadcast station WWV of the National Bureau of Standards.
Telephoned and telegraphed reports of ionospheric, solar, geomagnetic, and radio propagation data.

Weekly:

CRPL—J. Radio Propagation Forecast (of days most likely to be disturbed during following month).

Semimonthly:

CRPL—Ja. Semimonthly Frequency Revision Factors For CRPL Basic Radio Propagation Prediction Reports.

Monthly:

CRPL—D. Basic Radio Propagation Predictions—Three months in advance. (Dept. of the Army, TB 11-499-, monthly supplements to TM 11-499; Dept. of the Navy, DNC 13 ( ) series; Dept. of the Air Force, TO 16-1B-2 series.)
CRPL—F. Ionospheric Data.
*IRPL—A. Recommended Frequency Bands for Ships and Aircraft in the Atlantic and Pacific.
*IRPL—H. Frequency Guide for Operating Personnel.

Circulars of the National Bureau of Standards:

NBS Circular 462. Ionospheric Radio Propagation.
NBS Circular 465. Instructions for the Use of Basic Radio Propagation Predictions.

Reports issued in past:

IRPL—C61. Report of the International Radio Propagation Conference, 17 April to 5 May 1944.
IRPL—G1 through G12. Correlation of D. F. Errors With Ionospheric Conditions.
IRPL—R. Nonscheduled reports:
R4. Methods Used by IRPL for the Prediction of Ionosphere Characteristics and Maximum Usable Frequencies.
R5. Criteria for Ionospheric Storminess.
**R6. Experimental Studies of Ionospheric Propagation as Applied to the Loran System.
R7. Second Report on Experimental Studies of Ionospheric Propagation as Applied to the Loran System.
R9. An Automatic Instantaneous Indicator of Skip Distance and MUF.
R10. A Proposal for the Use of Rockets for the Study of the Ionosphere.
**R11. A Nomographic Method for both Prediction and Observation Correlation of Ionosphere Characteristics.
**R12. Short Time Variations in Ionospheric Characteristics.
R14. A Graphical Method for Calculating Ground Reflection Coefficients.
**R15. Predicted Limits for F2-Layer Radio Transmission Throughout the Solar Cycle.
**R17. Japanese Ionospheric Data—1943.
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